

XENOPHORA

TAXONOMY

Supplément à Xenophora, Bulletin de l'Association Française de Conchyliologie



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XENOPHORA TAXONOMY is a supplement to **XENOPHORA**, the quarterly bulletin published by AFC. It is shipped to all AFC members with the regular publication.

Cover:

Triviidae
MNHN La planète revisitée
Koumac 2019 KD502 LC003
Photographie : Laurent Charles (MNHN)



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**WESTERN PACIFIC CERITHIOPSIDAE:
KOUMAC, NORTH PROVINCE OF NEW CALEDONIA - PART 2.**

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RÉSUMÉ

Dans le présent article, le matériel rapporté par le MNHN de l'expédition Koumac 2-3, 2019 (Nouvelle Calédonie) comprenant 1127 spécimens de la famille des Cerithiopsidae est examiné ; dont 89 ont été identifiés. Sont illustrés : 14 espèces déjà signalées en Nouvelle Calédonie, 11 espèces connues sont signalées pour la première fois et 10 espèces, sont nouvelles pour la science. Des images d'animaux vivants de 10 espèces sont publiées.

ABSTRACT

In the present paper the material reported by MNHN from the 2019 Koumac 2-3 Expedition (New Caledonia) comprising 1127 specimens of the family Cerithiopsidae is examined, of which 89 have been identified. Are illustrated: 14 species already reported from New Caledonia, 11 known species are reported for the first time and 10 are new to science. Live animal images of 10 species are published.

Key words

Triphoroidea, Cerithiopsidae, New Caledonia, Koumac.

INTRODUCTION

The species of the Cerithiopsidae family reported in various expeditions carried out by the MNHN between 1992 and 2017 for New Caledonia, have already been reported in Cecalupo & Perugia (2017; 2021).

This contribution has analyzed the material reported by Expedition Koumac 2-3 of 2019 which includes a total of 1127 specimens; of these, 89 have been identified, but not illustrated, of which 53, reported for the first time in New Caledonia. 23 species are presented in this work. The final result of this expedition provides us with 33 species, of which: 14 species, already reported in previous works: *Clathropsis pulchella* (1), *Horologica barrieria* (20), *Joculator arduinii* (3), *Joculator coffeus* (4), *Joculator giovanolii* (1), *Joculator leguyaderi* (2), *Joculator tieensis* (1), *Marshallopsis boucheti* (5), *Marshallopsis spinosa* (1), *Mendax tenuicostata* (1), *Prolixodens oleagina* (2), *Specula santalensis* (9), *Synthopsis noumeaensis* (1), *Tubercliopsis miranda* (37).

11 species, were reported for the first time: *Clathropsis mafeaensis* (1), *Clathropsis quinquepilia* (1), *Horologica gregaria* (3), *Joculator boguszae* (1), *Joculator dakoi* (2), *Joculator ferrii* (36), *Joculator opulentus* (1), *Retilaskeya philippinensis* (2), *Specula seragakiensis* (2), *Synthopsis sebastianoi* (1), *Tubercliopsis sebyi* (1).

10 species, are new to science: *Joculator adustus* (1), *Joculator*

asper (1) *Joculator trifasciatus* (1), *Marshallopsis alterna* (1), *Specula apexalba* (203), *Specula fuscata* (1), *Specula gilvufuscata* (1), *Specula koumacensis* (5), *Sundaya pupoides* (1), *Sundaya rufula* (1), and 4 have been separated and simply illustrated as *Clathropsis* sp., *Joculator* sp. Considering all expeditions to New Caledonia a total of 191 species of the family Cerithiopsidae have been reported.

In **Plate 6**, the images of the living animal of 10 species are published (photos taken by David Massemin during the expedition): *Clathropsis* sp., *Horologica barrieria* Nützel, 1998, *Joculator arduinii* Cecalupo & Perugia, 2012, *Joculator coffeus* Cecalupo & Perugia, 2013, *Joculator* sp., *Marshallopsis boucheti* Cecalupo & Perugia, 2012, *Retilaskeya philippinensis* Cecalupo & Perugia, 2012, *Specula santalensis* Cecalupo & Perugia, 2017, *Tubercliopsis miranda* Cecalupo & Perugia, 2012.

Methods

All the species described have been previously washed with ultrasound and then illustrated with digital color and environmental scanning electron microscopy (ESEM) photos. Their identification is based only on the analysis of the morphological characteristics of the shell being the soft parts unknown. The size of the shells were measured manually with a microscope 20/40x.

Abbreviations used in the text

cf.	confer
spm(s)	specimen (s)
stn	station
W/H	width/height
ESEM	Environmental scanning Electron Microscope.
MNHN	Muséum National d'Histoire Naturelle, Paris, France.

Distribution of the listed species

The new species is highlighted in **bold**.

Abbreviations: **AU**- Australia; **C**- Comoro; **FP**- French Polynesia; **IND**- Indonesia; **J**- Japan; **LR**- La Réunion; **LY**- Loyalty Is.; **MS**- Mauritius; **MZ**- Mozambique; **NC**- New Caledonia; **NZ**- New Zealand; **PH**- Philippines; **PNG**- Papua New Guinea; **RS**- Red Sea; **SL**- Solomons; **SA**- South Africa; **SM**- South Madagascar; **V**- Vanuatu.

New Caledonia		C	FP	IND	J	LR	LY	MS	MZ	NC	NZ	PH	PNG	RS	SL	SA	SM	V
<i>Clathropsis mafeaensis</i>										X								X
<i>Clathropsis pulchella</i>			X							X		X					X	X
<i>Clathropsis quinquepilia</i>	X									X								
<i>Clathropsis sp.</i>										X								
<i>Horologica barrieria</i>	X									X								X
<i>Horologica gregaria</i>				X						X		X	X	X			X	
<i>Joculator adustus</i> sp. nov.										X								
<i>Joculator arduinii</i>			X							X								X
<i>Joculator asper</i> sp. nov.										X								
<i>Joculator boguszae</i>										X			X					
<i>Joculator coffeus</i>										X			X				X	X
<i>Joculator dakoi</i>										X			X					
<i>Joculator ferrii</i>						X				X								X
<i>Joculator giovanolii</i>										X								X
<i>Joculator leguyaderi</i>										X								X
<i>Joculator opulentus</i>										X			X					X
<i>Joculator sp.</i>										X								
<i>Joculator tieensis</i>										X								
<i>Joculator trifasciatus</i> sp. nov.										X								
<i>Marshallopsis alterna</i> sp. nov.										X								
<i>Marshallopsis boucheti</i>			X							X		X	X					X
<i>Marshallopsis spinosa</i>										X			X					X
<i>Prolixodens oleagina</i>										X								
<i>Mendax tenuicostata</i>										X								
<i>Retilaskeya philippinensis</i>			X		X		X		X	X		X	X		X		X	X
<i>Specula apexalba</i> sp. nov.										X								
<i>Specula fuscata</i> sp. nov.										X								
<i>Specula gilvufasciata</i> sp. nov.										X								
<i>Specula koumacensis</i> sp. nov.										X								
<i>Specula santalensis</i>							X			X			X					
<i>Specula seragakiensis</i>					X					X								
<i>Specula sp.</i>										X								
<i>Specula sp.</i>										X								
<i>Sundaya pupoides</i> sp. nov.										X								
<i>Sundaya rufula</i> sp. nov.										X								
<i>Synthopsis noumeaensis</i>										X								
<i>Synthopsis sebastianoi</i>										X		X	X					
<i>Tubercliopsis miranda</i>			X	X			X		X	X		X	X	X			X	X
<i>Tubercliopsis sebyi</i>										X		X						

SYSTEMATICS

Clade **Hipsogastropoda** Ponder & Lindberg, 1997Informal Group **Ptenoglossa** Gray, 1853Superfamily **Triphoroidea** Gray, 1847Family **Cerithiopsidae** H. Adams & A. Adams, 1853*Clathropsis mafeaensis* Cecalupo & Perugia, 2013
(Pl. 1A)**Figured specimen:** dim. 4.35 x 1.02 mm, protoconch 0.55 x 0.25 mm, stn KD543, New Caledonia. Koumac area, 15 m.**Type locality:** Vanuatu, Espiritus Santo, Segond Channel, Coolidge wreck, 25 m.**Distribution:** New Caledonia, Vanuatu.**Material examined:** spm 1, stn KD543, New Caledonia, Koumac area, gray sable and seaweed, 15 m, 20°35,4'S-164°11,1'E, 07NOV2019.**Remarks:** first report for New Caledonia.*Clathropsis pulchella* Cecalupo & Perugia, 2012
(Pl. 1B)**Figured specimen:** dim. 3.85 x 1.30 mm, protoconch 0.38 x 0.25 mm, stn KB645, New Caledonia, Koumac area, 16 m.**Type locality:** Philippines, Bohol Is., Manga, 4-10 m.**Distribution:** Indo-Pacific area.**Material examined:** spm 1, stn KB645, New Caledonia, Koumac area, dead coral and sediment from outer slope of

barrier reef, 16 m, 20°40,5'S-164°13'E, 15NOV2019.

Remarks: already reported in 2017.*Clathropsis quinquepilia* Laseron, 1951
(Pl. 1C-E)**Figured specimens:** figs. **C-D**. dim. 4.50 x 1.23 mm, protoconch 0.52 x 0.24 mm, stn KS500, New Caledonia, Koumac area, 3 m; fig. **E**. dim. 3.45 x 1.29 mm, stn KS500, New Caledonia, Koumac area, 3 m.**Type locality:** NSW Australia, 14 fathoms, off Long Reef.**Distribution:** NSW Australia, New Caledonia.**Material examined:** spms 2, stn KS500, New Caledonia, Koumac area, Infernet Reef, coral patch of sable terrace from behind of massive intermediate coral reef 3 m, 20°36,6'S-164°14,4'E, 28OCT2019.**Remarks:** first report for New Caledonia.*Clathropsis* sp.
(Pl. 6J)**Remarks:** unidentified species; the living animal is white in color with transparent colorless cephalic tentacles and black eyes.*Horologica barrieria* Nuützel, 1998
(Pl. 6D-E)**Remarks:** the living animal is whitish in color with transparent colorless cephalic tentacles, ash gray head and black eyes.

Horologica gregaria Cecalupo & Perugia, 2012
(Pl. 1F)

Figured specimen: dim. 2.25 x 0.75 mm, protoconch 0.60 x 0.30 mm, stn KB613, New Caledonia, Koumac area, 15 m.

Type locality: Philippines, Mactan Is., Olango Channel, 60-80 m.

Distribution: Indo-Pacific range.

Material examined: spm 1, stn KB613, New Caledonia, Koumac area, blocks and sediment in furrows of the outer slope of the barrier reef, 15 m, 20°40,1'S-164°11,4'E, 01NOV2019; spm 1, stn KB622, New Caledonia, Koumac area, Passe Deverd, at the base of coral wall of the pass, in barrier reef, 19-24 m, 20°45,1'S-164°13,9'E, 04NOV2019; spm 1, stn KB624, New Caledonia, Koumac area, sediment and dead coral at base of internal wall of flatbed of barrier reef, 3 m, 20°37,4'S-164°09'E, 05NOV2019.

Remarks: first report from New Caledonia.

Joculator adustus *sp. nov.*
(Pl. 1G-I)

Type material: holotype (MNHN-IM-2000-38741) dim. 2.20 x 0.77 mm, protoconch 0.40 x 0.20 mm, stn KB607, New Caledonia, Koumac area, Ilot Tangadiou, 1-6 m.

Type locality: New Caledonia, Koumac area, Ilot Tangadiou, 1-6 m.

Distribution: New Caledonia.

Material examined: spm 1, stn stn KB607, New Caledonia, Koumac area, Ilot Tangadiou, coral wall of intermediate reef, 1-6 m, 20°33'S-164°13,5'E, 30OCT2019.

Description of holotype:

Shell small, conical slightly inflated, sutures moderately impressed. Protoconch conical of 4.5 smooth convex whorls, pale yellowish, transparent. Teleoconch of 5.5 whorls with reticulate sculpture of 3 spiral cords (1st bigger) crossed by weaker axial ribs, about 20 on last whorl, beads at each intersection. A 4th beaded cord at the base of last whorl emerging from insertion of outer lip; limit between base and columella highlighted by a weak cord. Columella short crossed by crisp lines; columellar callus bordering an oval aperture, anal sulcus inconspicuous, siphonal canal well defined. Color pale brown with interspaces between beads darker.

Comparison:

Joculator adustus *sp. nov.* is compared with: *Joculator filum* Cecalupo & Perugia, 2017 with same distribution which mainly differs being shorter, whorls 4.5 vs 5.5, having 16 vs 20 axial ribs; *J. keratochroma* Jay & Drivas, 2002 longer, whorls 7 vs 5.5, with fewer axial ribs.

Etymology: Latin *adustus*, a, um in English burnt for its color.

Joculator arduinii Cecalupo & Perugia, 2012
(Pl. 6H)

Remarks: the living animal is yellow in color with transparent colorless cephalic tentacles and black eyes.

Joculator asper *sp. nov.*
(Pl. 1J-L)

Type material: holotype (MNHN-IM-2000-38742) dim. 1.65 x 0.68 mm, protoconch 0.30 x 0.18 mm, stn KB624, New Caledonia, Koumac area, 3 m.

Type locality: New Caledonia, Koumac area, 3 m.

Distribution: only known from type locality.

Material examined: spm 1, stn KB624, New Caledonia, Koumac area, sediment and dead coral at base of internal wall of flatbed of barrier reef, 3 m, 20°37,4'S-164°09'E, 05NOV2019.

Description of holotype:

Shell very small, oval elongated, sutures impressed. Protoconch short, subcylindrical of 3.5 smooth convex whorls, opaque white. Teleoconch of 4 whorls with reticulate sculpture of 3 spiral cords (1st less prominent) crossed by weaker axial ribs, about 18 on last whorl; slightly prominent beads at each intersection that give the surface of the shell a rough appearance. A 4th beaded cord at the base of last whorl emerging from insertion of outer lip; limit between base and columella highlighted by a cord. Columella short crossed by crisp lines, columellar callus bordering an oval aperture, anal sulcus and siphonal canal well defined. Color glossy red brown, translucent.

Comparison: many species of the genus *Joculator* have similar size, shape and a short protoconch but differ in color and, above all, in the rough surface. In particular *Joculator asper* *sp. nov.* is compared with *Marshallopsis elvirarivae* Cecalupo & Perugia, 2021 from Austral Is. (Neilson Reef), very similar but with a completely different protoconch.

Etymology: Latin *asper*, a, um in English rough.

Joculator boguszae Cecalupo & Perugia, 2018
(Pl. 2A-D)

Figured specimen: dim. 2.60 x 1.30 mm, protoconch damaged, stn KB650, New Caledonia, Koumac area, 33 m.

Type locality: Papua New Guinea, Niugini, Bil bil Is., 10 m.

Distribution: Papua New Guinea.

Material examined: spm 1, stn KB650, overhang and boulders falling from outer slope of barrier reef, 33 m, 20°46,6'S-164°15,7'E, 18NOV2019.

Remarks: first report from New Caledonia. The figurative species is teratological.

Joculator coffeus Cecalupo & Perugia, 2013
(Pl. 6F)

Remarks: the living animal is white in color with black eyes.

Joculator dakoi Cecalupo & Perugia, 2018
(Pl. 2E)

Figured specimen: dim. 1.72 x 0.72 mm, protoconch 0.44 x 0.25 mm, stn KL39, New Caledonia. Koumac area, Great Reef, 26 m.

Type locality: Papua New Guinea, Kavieng Lagoon, N side of Wadei, 8-10 m.

Distribution: New Caledonia, Papua New Guinea.

Material examined: spm 1, stn KL39, New Caledonia, Koumac area, Great Reef, 26 m, 20°45,1'S-164°14'E, 19SEP2018-10NOV2019; spm 1, stn KB666, New Caledonia, Koumac area, coral sediment, dead coral in the intermediate reef margin, 1 m, 20°39.3'S-164°17.5'E, 22NOV2019.

Remarks: first report for New Caledonia.

Joculator ferrii Cecalupo & Perugia, 2014
(Pl. 2F)

Figured specimen: dim. 1.90 x .075 mm, protoconch 0.47 x 0.20 mm, stn KB600, New Caledonia, Infernet Reef, 1 m.

Type locality: Vanuatu, Tutuba Is., 8-20 m.

Distribution: New Caledonia, Vanuatu.

Material examined: spm 1, stn KB502, New Caledonia, Koumac area, Ilot de la Table, blocks and sable on a fringing reef flat, 0 m, 20°33,5'S-164°11,2'E, 31OCT2019; spm 1, stn KB511, New Caledonia, Koumac area, blocks of weakly encrusted rock, 0 m, 20°29,1'S-164°10,5'E, 11NOV2019; spm 1, stn KB521, New Caledonia, Koumac area, pebbles on the edge of the Rhizophora, 0 m, 20°41,3'S-164°21,8'E, 23NOV2019; spms 2, stn KB600, New Caledonia, Koumac area, Infernet Reef (dead coral, living coral, sediment of internal drop-off of intermediate coral massif), (dead coral, sediment, a few living corals of intermediate coral reef flat, 1 m, 20°36,6'S-164°14,4'E, 28OCT2019; spms 2, KB629, New Caledonia, Koumac area, coral patch on sable bottom in lagoon, 10 m, 20°35,5'S-164°12,9'E, 07NOV2019; spm 1, KB657, New Caledonia, Koumac area, exposed slope of intermediate coral massif, 4 m, 20°36,8'S-164°13,7'E, 20NOV2019; spms 7, stn KB661, New Caledonia, Koumac area, 3 m, 20°33,8'S-164°13,9'E, 21NOV2019; spms 17, stn KB665, New Caledonia, Koumac area, bottom with dead and living corals, small coral mass in intermediate back reef terrace, sable, diffuse herbarium in Thalassia, 1 m, 20°40,2'S-164°18,5'E, 20NOV2019; spms 3, stn KB669, New Caledonia, Koumac area, 3 m, 20°42,1'S-164°19,3'E, 23NOV2019; spm 1, stn KS504, New Caledonia, Koumac area, NO Infernet Reef, living coral on slope of intermediate massif, 8 m, 20°36,2'S-164°13,3'E, 30OCT2019.

Remarks: first report for New Caledonia.

Joculator giovanolii Cecalupo & Perugia. 2013
(Pl. 2M)

Figured specimen: dim. 1.72 x 0.72 mm, protoconch 0.44 x 0.25 mm, stn KB600, New Caledonia, Koumac area, Infernet Reef, 1 m.

Type locality: Vanuatu, Espiritu Santo, NW coast of Malo Is., 78-91 m.

Distribution: New Caledonia, Vanuatu.

Material examined: spm 1, stn KB600, New Caledonia. Koumac area, Infernet Reef (dead coral, living coral, sediment of internal drop-off of intermediate coral massif), (dead coral, sediment, a few living corals of intermediate coral reef flat, 1 m, 20°36,6'S-164°14,4'E, 28OCT2019.

Remarks: second report from New Caledonia.

Joculator leguyaderi Cecalupo & Perugia, 2013
(Pl. 2G)

Figured specimen: dim. 3.35 x 1.20 mm, protoconch 0.52 x 0.22 mm, stn KD539, New Caledonia. Nouméa area.

Type locality: Vanuatu, NW Urélapa Is., 22-25 m.

Distribution: New Caledonia, Vanuatu.

Material examined: spms 2, stn KD539, New Caledonia. Nouméa area, brown algae, sponges, 11 m, 20°34,1'S-164°10,6'E, 06NOV2019.

Remarks: second report for New Caledonia.

Joculator opulentus Cecalupo & Perugia, 2013
(Pl. 2H)

Figured material: dim. 2.20 x 0.92 mm, protoconch 0.37 x 0.20 mm, stn KB647, New Caledonia, Koumac area, 38 m.

Type locality: Vanuatu, SW Urélapa Is., 30 m.

Distribution: New Caledonia, Papua New Guinea, Vanuatu.

Material examined: spm 1, stn KB647, New Caledonia, Koumac area, coral sediment on slope at the base of a drop-off of the outer external slope of barrier reef, 38 m, 20°39,8'S-164°11,4'E, 16NOV2019.

Remarks: first report from New Caledonia.

***Joculator* sp.**
(Pl. 6B-C)

Remarks: species not identifiable due to lack of protoconch. The living animal is pale yellowish in color with transparent colorless cephalic tentacles, head yellow and black eyes.

Joculator tieensis Cecalupo & Perugia, 2017
(Pl. 2I)

Figured specimen: dim. 2.05 x 0.75 mm, protoconch damaged, stn 1341, New Caledonia. Nouméa area, 35 m.

Type locality: New Caledonia, Touho area, Haut-Fond de Tié, 5-25 m.

Distribution: New Caledonia.

Material examined: spm 1, EXPEDITION MONTROUZIER, stn 1341, New Caledonia, Nouméa area, Mberé Reef, extreme slope, 35 m, 22°19,9'S-166°13,2'E, 25AUGU1992.

Remarks: second reported from New Caledonia.

Joculator trifasciatus sp. nov.
(Pl. 2I-L)

not *Joculator iopuei* Cecalupo & Perugia, 2017: 59, pl.30 figs. 3a-c.

Type material: holotype (MNHN-IM-2000-38743) dim. 2.05 x 0.80 mm, protoconch 0.30 x 0.20 mm, stn KB635, New Caledonia, Koumac area, 16 m.

Type locality: New Caledonia, Koumac area, 16 m.

Distribution: New Caledonia, Papua New Guinea.

Material examined: spm 1, stn KB635, New Caledonia, Koumac area, intermediate massif drop-off, 16 m, 20°38,4'S-164°16,5'E, 11NOV2019.

Description of holotype:

Shell small, oval elongated, sutures moderately impressed. Protoconch subcylindrical of 3.5 smooth convex whorls, opaque white. Teleoconch of 4.5 whorls with reticulate sculpture of 3 spiral cords (1st bigger) crossed by weaker axial ribs, about 14 on last whorl, beads at each intersection. A 4th beaded cord at the base of last whorl emerging from insertion of outer lip; limit between base and columella highlighted by a cord. Columella short crossed by crisp lines, columellar callus bordering an oval aperture, anal sulcus and siphonal canal well defined. Color first 2 whorls red brown, third yellowish, last red brown with first spiral cord white.

Comparison:

Joculator trifasciatus sp. nov. has a very particular coloring and can be compared with few other species: *Joculator ioupei* Cecalupo & Perugia, 2017 from New Caledonia which differs mainly in having an oval shape and *Joculator brabant* Cecalupo & Perugia, 2013 from Vanuatu with similar shape and protoconch but different color.

Etymology: Latin *trifasciatus*, a, um in English with three color bands.

Marshallopsis alterna sp. nov.
(Pl. 3A-C)

Type specimen: holotype (MNHN-IM-2000-38744), dim. 2.47 x 0.90 mm, protoconch 0.47 x 0.27 mm, stn KL25, New Caledonia, Great Koumac Reef, 65 m.

Type locality: New Caledonia, Koumac, Great Reef, 65 m.

Distribution: only know from type locality.

Material examined: spm 1, stn KL25, New Caledonia, Great Koumac Reef, 65 m, 20°45,3'S-164°13,8'E, 16SEP2018-10NOV2019.

Description of holotype:

Shell small, oval elongated with constricted base, sutures impressed. Protoconch conical of 4.5 convex whorls, color pale yellowish, opaque. Showing under ESEM: 1.5 embryonic whorls finely granulate; next whorls smooth on the upper half, on the lower half with a sculpture of thin axial prosocline riblets (about 25 for whorl), regularly spaced. Teleoconch of 5 whorls; reticulate sculpture of 3 spiral cords crossed by axial ribs (about 16 on last whorl), beads at each intersection. Another beaded cord emerging from insertion of outer lip; limit between base and columella highlighted by a cord. Columella short and broad with surface crossed by transverse thin threads; outer lip slightly damaged. Color whitish with last two spiral cords brown on the 3rd and 4th whorls, only the 3rd cord on the last whorl.

Comparison: for the bicoloration *Marshallopsis alterna* sp. nov. can be confused with *Horologica annagregis* Cecalupo & Perugia, 2013 and *Specula santalensis* Cecalupo & Perugia, 2017, both with a West Pacific range, but having a clearly different protoconch. *Specula solai* Cecalupo & Perugia, 2014 and *Joculator hasegawai* Cecalupo & Perugia, 2019 from Okinawa, both having same bicolor with alternating bands but in a different position and a different protoconch.

Etymology: from Latin *alternus*, a, um with reference to the coloring with alternating bands.

Marshallopsis boucheti Cecalupo & Perugia, 2012
(Pl. 6I)

Remarks: the living animal is whitish in color with black eyes.

Marshallopsis spinosa Cecalupo & Perugia, 2013
(Pl. 3D-E)

Figured specimen: dim. 1.62 x 0.65 mm, protoconch 0.47 x 0.25 mm, stn KB616, New Caledonia, Koumac area, 13 m.

Type locality: Vanuatu, Espiritu Santo Is., Second Channel, Coolidge wreck, 25 m.

Distribution: New caledonia, Papua New Guinea, Vanuatu.

Material examined: spm 1, stn KB616, New Caledonia ,

Koumac area, sable and sediment at the base of reef patch of the pass, 13 m, 20°44,7'S-164°15,9'E, 02NOV2019.

Remarks: already reported in Cecalupo & Perugia (2017); first image with the complete protoconch.

Mendax tenuicostata Cecalupo & Perugia, 2017
(Pl. 3J-L)

Figured specimen: dim. 4.00 x 1.50 mm, protoconch 0.40 x 0.31 mm, stn KB606, New Caledonia, Koumac area, Ilot Tangadiou, 8 m.

Type locality: New Caledonia, Koumac Pass, 26-40 m.

Distribution: New Caledonia.

Material examined: spm 1, stn KB606, New Caledonia, Koumac area, Ilot Tangadiou, coral wall of intermediate reef, 8 m, 20°33,1'S-164°13,2'E, 30OCT2019.

Prolixodens oleagina Cecalupo & Perugia, 2017
(Pl. 3F-G)

Figured specimens: **fig. F.** dim. 2.15 x 0.75 mm, protoconch missing, stn KB654, New Caledonia, Koumac area, 15 m; **fig. G.** dim. 1.90 x 0.75 mm, protoconch missing, stn KB622, New Caledonia, Koumac area, 19-24 m.

Type locality: Papua New Guinea, Kavieng Lagoon, W Nago Is., 15-16 m.

Distribution: Papua New Guinea, New Caledonia.

Material examined: spm 1, stn KB622, New Caledonia, Koumac area, Deverd Pass, base of the coral drop-off of barrier reef pass, 19-24 m, 20°45,1'S-164°13,9'E, 04NOV2019; spm 1, stn KB654, New Caledonia, Koumac area, outer slope of barrier reef, 15 m, 20°26,8'S-164°58,4'E, 19NOV2019.

Remarks: second report from New Caledonia.

Retilaskeya philippinensis Cecalupo & Perugia, 2012
(Pl. 3H-I, Pl. 6A)

Figured specimens: dim. 6.40 x 1.65 mm, protoconch missing, stn KB626, New Caledonia, Koumac area, 10-13 m.

fig. I: dim. 3.25 x 1.23 mm proto. 0.62 x 0.30 mm, New Caledonia, Koumac area.

Type locality: Philippines, West Pamilacan Is., 80-120 m.

Distribution: Papua New Guinea, Philippines, New Caledonia.

Material examined: spm 1, stn KB626, New Caledonia, Koumac area, sable slab with gorgonians, lagoon caulerpa & falling of incised channel in the lagoon bottom, 10-13 m, 20°34,3'S-164°13,5'E, 06NOV2019; spm 1, stn KL9, New Caledonia, Great Koumac Reef, circalittoral of external slope of barrier reef, 67 m, 20°37,3'S-164°08,3'E, 15SEP2018.

Remarks: first report for New Caledonia. The living animal has

bright orange color, transparent colorless cephalic tentacles and black eyes.

Specula apexalba sp. nov.
(Pl. 4A-C)

Type specimen: holotype (MNHN-IM- 2000-38745), dim. 2.12 x 0.84 mm, protoconch 0.25 x 0.20 mm, stn KD531, New Caledonia, Koumac area, 11 m.

paratype 1 (MNHN-IM-2000-38746), dim. 2.15 x 0.87 mm, protoconch 0.25 x 0.20 mm, stn KD524, New Caledonia, Koumac area, 8 m.

paratype 2-3-4-5 (MNHN-IM-2000-38747), New Caledonia, Koumac area, stn KD539, 11 m.

Type locality: New Caledonia, Koumac area, 11 m.

Distribution: only know from type locality.

Material examined: spm 1, stn KD524, New Caledonia, Koumac area, sable, brown algae, sea cucumbers, 8 m, 20°36,4'S-164°14,6'E, 03NOV2019; spms 14, stn KD531, New Caledonia, Koumac area, Halimeda, sable, brown algae, sponges, 11 m, 20°33,3'S-164°10,5'E, 04NOV2019; spms 2, stn KD534, New Caledonia, Koumac area, Halimeda, 16 m, 20°32,4'S-164°07,2'E, 05NOV2019; spms 34, stn KD535, New Caledonia, Koumac area, white sable, sponges, Halophia, brown algae, 12 m, 20°33,1'S-164°09,2'E, 05NOV2019; spm 1, stn KD536, New Caledonia, Koumac area, small coral sediment, sponges, 13 m, 20°31,1'S-164°05,1'E, 06NOV2019; spms 3, stn KD538, New Caledonia, Koumac area, white sable, Halimeda, 5-6 m, 20°33,5'S-164°10,8'E, 06NOV2019; spms 86, stn KD539, New Caledonia, Koumac area, brown algae, sponges, 11 m, 20°34,1'S-164°10,6'E, 06NOV2019; spms 59, stn KD545, New Caledonia, Koumac area, compact vase, 25 m, 20°40,2'S-164°16,6'E, 08NOV2019; spm 1, stn KL22, New Caledonia, Koumac area, Great Reef, circalittoral of external slope of barrier reef, 92 m, 20°33,4'S-164°00,1'E, 16SEP2018-14NOV2019; spms 2, stn KR907, New Caledonia, Koumac area, sandy slab with gorgonians, scattered seagrass, caulerpa & channel drop-off with "gorgonians? wire", 10 m, 20°34,3'S-164°13,5'E, 07NOV2019.

Description of holotype:

Shell small, oval elongated, sutures moderately impressed, constricted last whorl. Protoconch short, slightly conical, of about 2.5 smooth, slightly convex whorls, apex spherical, color white, opaque. Teleoconch of 5.5 not very convex whorls with reticulate sculpture of 3 spiral cords, 1st slightly bigger on last whorl, crossed by weaker axial ribs (18 on last whorl); beads at each intersection. At the base of the last whorl a 4th beaded cord emerging from insertion of outer lip; limit between base and columella highlighted by clear angle and a groove. Columella short crossed by thin growth lines; a ridge bordering the subcircular aperture with siphonal canal and anal sulcus well defined. Color brown, 1st spiral cord in the last whorl paler.

Comparison: *Specula apexalba* n. sp. is compared with *Specula dimatteoi* Cecalupo & Perugia, 2017 with same distribution and very similar in shape but, with the same number of whorls, it is larger in size, has teleoconch more elongated, protoconch longer and broader and uniform color shows no paler cord.

In the genus *Joculator* there are some species comparable in shape, size and color; for example *Joculator kanoi* Cecalupo & Perugia, 2013, but always easily separable for the different protoconch.

Etymology: *apexalba* from latin *apex* and *albus*, a, um in English apex and white.

***Specula fuscata* sp. nov.**
(Pl. 4D-F)

Type specimen: holotype (MNHN-IM-2000-38748), dim. 3.05 x 1.22 mm, protoconch 0.35 x 0.24 mm, stn KB506, New Caledonia, Koumac area, Ilot Tangadiou, 0 m.

Type locality: New Caledonia, Koumac area, Ilot Tangadiou, 0 m.

Distribution: only know from type locality.

Material examined: spm 1, stn KB506, New Caledonia, Koumac area, Ilot Tangadiou, beach rock, 0 m, 20°33,2'S-164°13,5'E, 04NOV2019.

Description of holotype:

Shell small, conical with constricted last whorl, sutures moderately impressed. Protoconch short, nearly cylindrical of 2.5 smooth, convex whorls, apex spherical. Color whitish, opaque. Teleoconch of 6 whorls with reticulate sculpture of 3 equal spiral cords, 1st immediately after suture, crossed by weaker axial ribs (about 18 on last whorl). Beads at each intersection. At the base of the last whorl a 4th beaded cord emerging from insertion of outer lip; limit between base and columella highlighted by clear groove. Columella short; aperture not perfectly complete and slightly damaged. Color brown, clearer in the first and last whorl.

Comparison: for a comparison attempt the only species with similar coloration are reported for Vanuatu as *Joculator* sp. in Cecalupo & Perugia, 2017 (pl. 58, fig. W and pl. 59, fig. J) both without protoconch.

Etymology: Latin *fuscatus*, a, um in English brownish, for its color.

***Specula gilvufasciata* sp. nov.**
(Pl. 4G)

Specula cf. *seragakiensis* Cecalupo & Perugia, 2019: 46-47, pl. 20, fig. 1a-c.

Type specimen: holotype (MNHN-IM-2000-38749), dim. 2.30 x 0.95 mm, protoconch 0.37 x 0.22 mm, stn KB642, New Caledonia, Koumac area, 28 m.

Type locality: New Caledonia, Koumac area, 28 m.

Distribution: Japan (Okinawa), New Caledonia.

Material examined: spm 1, stn stn KB642, New Caledonia, Koumac area, blocks, sediment, dead coral from outer wall of barrier reef, 28 m, 20°42,6'S-164°15,4'E, 15NOV2019.

Description of holotype:

Shell small, conical, juvenile, sutures impressed. Protoconch subcylindrical, short of 2.5 convex whorls, first whorl with lower half granulous, apex spherical. Color yellowish, opaque. Teleoconch of 4.5 whorls with reticulate sculpture of 3 near equal spiral cords (1st immediately after suture) crossed by narrower axial ribs, about 22 on last whorl; beads at each intersection. A 4th beaded cord at the base of last whorl emerging from the insertion of the outer lip; limit between base of shell and columella highlighted by a groove. Aperture incomplete. Color yellowish, 1st spiral cord and columella pale orange; in the last whorl last 2 spiral cords paler.

Comparison: considered in Cecalupo & Perugia, 2019 probable teratological form of *Specula seragakiensis* Cecalupo & Perugia, 2019 from Okinawa this second specimen confirms the validity of the species; both have a W Pacific distribution. *Specula gilvufasciata* n. sp. is compared with *Specula dumasi* Cecalupo & Perugia, 2013 from Vanuatu but also reported from Nouméa, very similar in shape and size which differs having bicolor white/red brown vs yellowish/pale orange and a sculpture with 18 vs 22 axial ribs and spiral cords features evident in all the specimens examined. *Specula dagostinoi* Cecalupo & Perugia, 2017 from New Caledonia have similar shape and protoconch but uniform brown color.

Etymology: latin *gilvufasciatus*, from Latin *gilvus*, a um and *fascia-atus*, a um in English with yellow band.

***Specula koumacensis* sp. nov.**
(Pl. 4H-J)

Type specimen: holotype (MNHN-IM-2000-38750), dim. 1.68 x 0.65 mm, protoconch 0.25 x 0.22 mm, stn KD539, New Caledonia, Koumac area, 11 m.

paratype 1 (MNHN-IM-2000-38751) dim. 1.80 x 0.70 mm, protoconch 0.25 x 0.22 mm, stn KD524, New Caledonia, Koumac area, 8 m.

paratype 2 (MNHN-IM-2000-38752) dim. 1.97 x 0.72 mm, protoconch 0.25 x 0.21 mm, stn KD588, New Caledonia, Koumac area, 3 m.

paratype 3 (MNHN-IM-2000-38753) dim. 2,05 x 0.77 mm, protoconch 0.23 x 0.20 mm, stn KD585, New Caledonia, Koumac area, 4-5 m.

Type locality: New Caledonia, Koumac area, 11 m.

Distribution: only know from type locality.

Material examined: spm 1, stn KD524, New Caledonia, Koumac area, sable, brown algae, holothurries, 8 m, 20°36,4'S-164°14,6'E, 03NOV2019; spm 1, stn KD539, New Caledonia, Koumac area, brown algae, sponges, 11 m, 20°34,1'S-164°10,6'E, 06NOV2019; spms 2, stn KD585, New Caledonia, Koumac area, brown algae, corals, 4-5 m, 20°39,5'S-164°18,7'E, 22NOV2019; spm 1, stn KD588, New Caledonia, Koumac area, sable, Thalassia, Halimeda, Caulerpes, sponges, 3 m, 20°38,7'S-164°18,2'E, 22NOV2019.

Description of holotype:

Shell small, oval elongated, sutures moderately impressed,

constricted last whorl. Protoconch short, conical, of about 2.5 smooth, convex whorls, apex spherical, color brown, translucent. Teleoconch of 4.2 slightly convex whorls with reticulate sculpture of 3 spiral cords, 1st slightly bigger, crossed by weaker axial ribs (18 on last whorl); beads at each intersection. At the base of the last whorl a 4th beaded cord emerging from insertion of outer lip; limit between base and columella highlighted by clear angle and weak groove. Columella short crossed by thin growth lines; a ridge bordering the subcircular aperture with siphonal canal and anal sulcus well defined. Color dark brown, beads paler.

Comparison: *Specula naooae* Cecalupo & Perugia, 2019 from Okinawa is very similar to *Specula koumacensis* sp. nov. but differs having color light brown, a smaller protoconch (mm 0.18 x 0.18 vs 0.25 x 0.22) and less axial ribs.

Etymology: *koumacensis* from Koumac area report place.

Specula santalensis Cecalupo & Perugia, 2017
(Pl. 5A, Pl. 6G)

Figured specimen: dim. 1.50 x 0.60 mm, protoconch 0.25 x 0.20 mm; stn KD540, New Caledonia, Koumac area, 7 m.

Type locality: New Caledonia, Loyalty Is., Lifou, Santal Bay, 5-20 m.

Distribution: Loyalty Is., New Caledonia, Papua New Guinea.

Material examined: spm 1, stn KB618, New Caledonia, Koumac area, block and sediment at the base of the coral massif behind the inner terrace of the barrier reef, 12 m, 20°30,8'S-164°01,9'E, 03NOV2019; spm 1, stn KD519, New Caledonia, Koumac area, gray sable, Halimeda, 7 m, 20°34,1'S-164°11'E, 11NOV2019 spm 1, stn KD528, New Caledonia, Koumac area, sable, brown algae, Halimeda, 11 m, 20°31,2'S-164°10,7'E, 04NOV2019 spm 1, stn KD535, New Caledonia, Koumac area, white sable, sponges, Halophia, brown algae, 12 m, 20°33,1'S-164°09,2'E, 05NOV2019; spms 2, stn KD539, New Caledonia, Koumac area, brown algae, sponges, 11 m, 20°34,1'S, 164°10,6'E, 06NOV2019 spms 3, stn KD540, New Caledonia, Koumac area, coral sediment and sponges, 7 m, 20°37,8'S-164°14,7'E, 07NOV2019.

Remarks: the holotype was established on a specimen in not good conditions, a perfect specimen is now illustrated: in the original diagnosis the color must be corrected in "yellowish with 1st spiral cord and columella dark brown". The living animal is yellow in color with transparent colorless cephalic tentacles and black eyes.

Specula seragakiensis Cecalupo & Perugia, 2019
(Pl. 5B-D)

Figured specimens: figs. B-C. dim. 3.01 x 1.10 mm, protoconch 0.42 x 0.25 mm; New Caledonia, Nouméa area, Mberé Reef, 9-10 m.

fig. D: dim. 2.00 x 0.90 mm, protoconch damaged. stn 1373, same locality.

Type locality: Japan, Okinawa, Seragaki, Onnason Village, 5

m.

Distribution: Japan, New Caledonia.

Material examined: spms 2, EXPEDITION MONTROUZIER, stn 1373, New Caledonia, Nouméa area, Mberé Reef, outer sloop, 9-10 m, 22°19.7'S-166°13.2'E, 05MAY1993.

Remarks: first report for New Caledonia.

Specula sp.
(Pl. 5E)

Figured specimen: dim. 2.05 x 0.85 mm, protoconch 0.32 x 0.18 mm, stn KB661, New Caledonia, Koumac area, 3 m.

Distribution: only know from Caledonia, Koumac area.

Material examined: spm 1, stn KB661, New Caledonia, Koumac area, 3 m, 20°33,8'S-164°13.9'E, 21NOV2019.

Description: Shell juvenile, conical, sutures impressed. Protoconch subcylindrical, short of 2.5-3 convex whorls, apex small spherical. Color white. Teleoconch of 4.5 whorls with reticulate sculpture of 3 near equal spiral cords crossed by narrower axial ribs, about 16 on last whorl; beads at each intersection. A 4th beaded cord at the base of last whorl emerging from the insertion of the outer lip. Aperture incomplete; color brown with paler beads on the 1st spiral cord.

Material examined: spm 1, stn KB661, Caledonia, Koumac area, 3 m, 20°33,8'S-164°13,9'E, 21NOV2019.

Specula sp.
(Pl. 5F)

Figured specimen: dim. 2.45 x 0.75 mm, protoconch 0.22 x 0.17 mm, stn KB667, New Caledonia, Koumac area, 1 m.

Distribution: only know from New Caledonia, Koumac area.

Material examined: spm 1, stn KB667, New Caledonia, Koumac area, phanerogam herbarium on sable flat of intermediate reef, 1 m, 20°39,5'S-164°17'E, 22NOV2019.

Description: shell small, near cylindrical, inflated, sutures moderately impressed, color dark brown. Protoconch short, conical of 2.5 smooth convex whorls. Teleoconch of 6 whorls with reticulate sculpture of 3 equal spiral cords crossed by weaker axial ribs (16 on last whorl), beads at each intersection. At the base of the last whorl a 4th beaded cord emerging from insertion of outer lip; limit between base and columella highlighted by an angle. Columella short crossed by thin growth lines; a ridge bordering an oval aperture, siphonal canal and anal sulcus well defined.

Remarks: possible teratological specimen of *Specula koumacensis* n. sp. reported here; it has similar characteristics, the only difference being the larger size.

Sundaya pupoides sp. nov.
(Pl. 5H)

Type specimen: holotype (MNHN-IM-38755), dim. 2.30 x 0.95 mm, protoconch 0.37 x 0.22 mm, stn KB607, New Caledonia, Koumac area, Ilot Tangadiou, 1-6 m.

Type locality: New Caledonia, Koumac area, Ilot Tangadiou, 1-6 m.

Distribution: only known from type locality.

Material examined: spm 1, stn KB607, New Caledonia, Koumac area, Ilot Tangadiou, coral wall of intermediate reef, 1-6 m, 20°33'S-164°13.5'E, 30OCT2019.

Description of holotype:

Shell small, oval elongated with slightly constricted base, sutures moderately impressed. Protoconch short of lecithotrophic larval type, dome-shaped, of 1.5-2 convex whorls, apex small, uncolored, semitransparent. Teleoconch of 4.75 whorls with reticulate sculpture of 3 near equal spiral cords crossed by narrower axial ribs, about 16 on last whorl; beads at each intersection. A 4th beaded cord at the base of last whorl emerging from the insertion of the outer lip; limit between base of shell and columella highlighted by a cord. Columella short; a ridge bordering a subcircular aperture, siphonal canal and anal sulcus well defined. Color orange with paler beads.

Comparison: for the shape we compared *Sundaya pupoides* sp. nov. with *Sundaya tuberculata* Powell, 1927 from New Zealand but the main difference is the uniform white color.

Etymology: Latin *pupoides* in English pupoids for its shape.

Sundaya rufula sp. nov.
(Pl. 5G)

Type specimen: holotype (MNHN-IM-2000-38756) dim. 1.45 x 0.72 mm, protoconch 0.14 x 0.17 mm, stn KB665, New Caledonia, Koumac area, 1 m.

Type locality: New Caledonia, Koumac area, 1 m.

Distribution: only known type locality.

Material examined: spm 1, stn KB665, New Caledonia, Koumac area, bottom with dead and living corals, small coral mass in intermediate back reef terrace, sable, diffuse herbarium in *Thalassia*, 1 m, 20°40.2'S-164°18.5'E, 20NOV2019.

Description of holotype:

shell very small, oval in shape but slightly elongated towards the protoconch, sutures impressed. Protoconch short of lecithotrophic larval type, dome-shaped, of 1.5-2 convex whorls, uncolored glassy, apex small. Teleoconch of 4 whorls with reticulate sculpture of 3 spiral cords crossed by narrower axial ribs, about 15 on last whorl; evident beads at each intersection. A 4th beaded cord at the base of last whorl emerging from the insertion of the outer lip; limit between

base of shell and columella highlighted by a cord and groove. Columella short; a ridge bordering a subcircular aperture, siphonal canal and anal sulcus well defined. Color not uniform light red-brown, darker columella, 1st cord with paler beads and interspaces darker.

Comparison: *Sundaya rufula* sp. nov. is compared with some species of the same genus reported in Cecalupo & Perugia, 2017 pls 46-47 from New Caledonia, from which it differs mainly in some characteristics: the more conical profile of the upper half and the not uniform color. *Sundaya bancheti* Cecalupo & Perugia, 2017, has a more oval profile, larger dimensions, 20 vs 15 axial ribs and a uniform chocolate brown color; *Sundaya laboutei* Cecalupo & Perugia, 2017, has a more oval profile, color uniform red brown and 18 vs 15 axial ribs; *Sundaya rigneusae* Cecalupo & Perugia, 2017, is more similar but has a more oval profile with a uniform dark orange color.

Etymology: Latin *rufulus*, a, um for its light red-brown color.

Synthopsis noumeaensis Cecalupo & Perugia, 2017
(Pl. 5I)

Figured specimen: dim. 2.07 x 0.72 mm, protoconch 0.45 x 0.22 mm, stn KD540, New Caledonia. Koumac area, 7 m.

Type locality: New Caledonia, Nouméa, Barrier Reef, 25-35 m.

Distribution: New Caledonia.

Material examined: spm 1, stn KD540, New Caledonia. Koumac area, coral sediment and sponges, 7 m, 20°37.8'S-164°14.7'E, 07NOV2019.

Remarks: second species reported.

Synthopsis sebastianoi Cecalupo & Perugia, 2012
(Pl. 5J)

Figured specimen: dim. 2.25 x 0.93 mm, protoconch 0.30 x 0.25 mm, stn KD523, New Caledonia, Koumac area, 6-8 m.

Type locality: Philippines, Panglao Is., Catarman, 3-30 m.

Distribution: Indo-Pacific area.

Material examined: spm 1, stn KD523, New Caledonia, Koumac area, sable and brown mud, 6-8 m, 20°36.4'S-164°17.6'E, 02NOV2019.

Remarks: first report for New Caledonia.

Tuberclipsis miranda Cecalupo & Perugia, 2012
(Pl. 6K)

Remarks: the living animal has white color, greyish semi-transparent cephalic tentacles and black eyes.

Tubercliopsis sebyi Cecalupo & Perugia, 2012
(Pl. 5K)

Figured specimen: dim. 2.18 x 0.82 mm, protoconch 0.60 x 0.23 mm, stn KB607, New Caledonia, Koumac area, Ilot Tangadiou, 1-6 m.

Type locality: Philippines, Pamicalan Is., 2-3 m.

Distribution: New Caledonia, Philippines.

Material examined: spm 1, stn KB607, New Caledonia, Ilot Tangadiou, intermediate reef coral drop-off, 1-6 m, 20°33'S-164°13'E, 30OCT2019.

First report for New Caledonia.

Remarks: *Tubercliopsis sebyi* is very similar to *Cerithiopsis literalis* Laseron, 1951 from NSW Australia which differs having a protoconch longer (0.82 vs 0.54 mm) with more convex whorls and a ratio lower (W/L, 0.26 vs 0.31). Other known species with long and slender protoconch and a very acuminate apex are: *Cerithiopsis flava* (C.B. Adams, 1850) from Caribbean area and *Cerithiopsis septapilia* Laseron, 1951 from NSW Australia.

Acknowledgements:

Our thanks to the MNHN staff, Philippe Bouchet, Philippe Maestrati and Virginie Héros, who provided us with the materials analyzed in this paper and for their kind in bibliographic and technical assistance. A special thank to David Massemin who sent us and allowed us to publish his photos of living animals.

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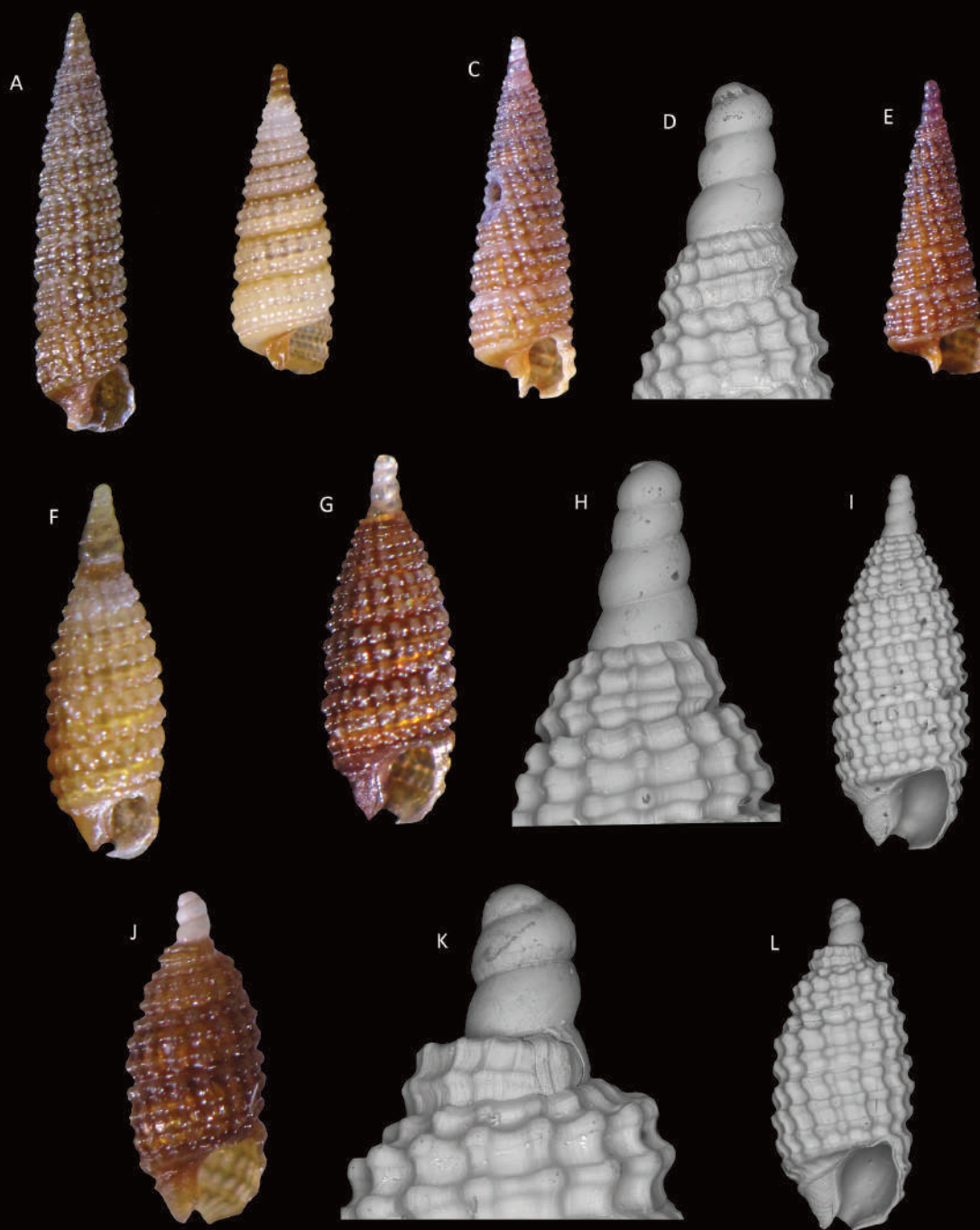


Plate 1. A. *Clathropsis mafaensis* Cecalupo & Perugia, 2013, 4.35 x 1.02 mm, New Caledonia, Koumac area; B. *Clathropsis pulchella* Cecalupo & Perugia, 2012, 3.85 x 1.30 mm, New Caledonia, Koumac area; C-D. *Clathropsis quinquepilia* Laseron, 1951, 4.50 x 1.23 mm, protoconch 0.52 x 0.24 mm, New Caledonia, Koumac area; E. *Clathropsis quinquepilia* Laseron, 1951, dim. 3.45 x 1.29 mm, New Caledonia, Koumac area; F. *Horologica gregaria* Cecalupo & Perugia, 2012, 2.25 x 0.75 mm, New Caledonia, Koumac area; G-H-I. *Joculator adustus* sp. nov. holotype (MNHN-IM-2000-38741), 2.20 x 0.77 mm, protoconch 0.40 x 0.20 mm, New Caledonia, Koumac area; J-L. *Joculator asper* sp. nov. holotype (MNHN-IM-2000-38742), 1.65 x 0.68 mm, protoconch 0.30 x 0.18 mm, New Caledonia, Koumac area.

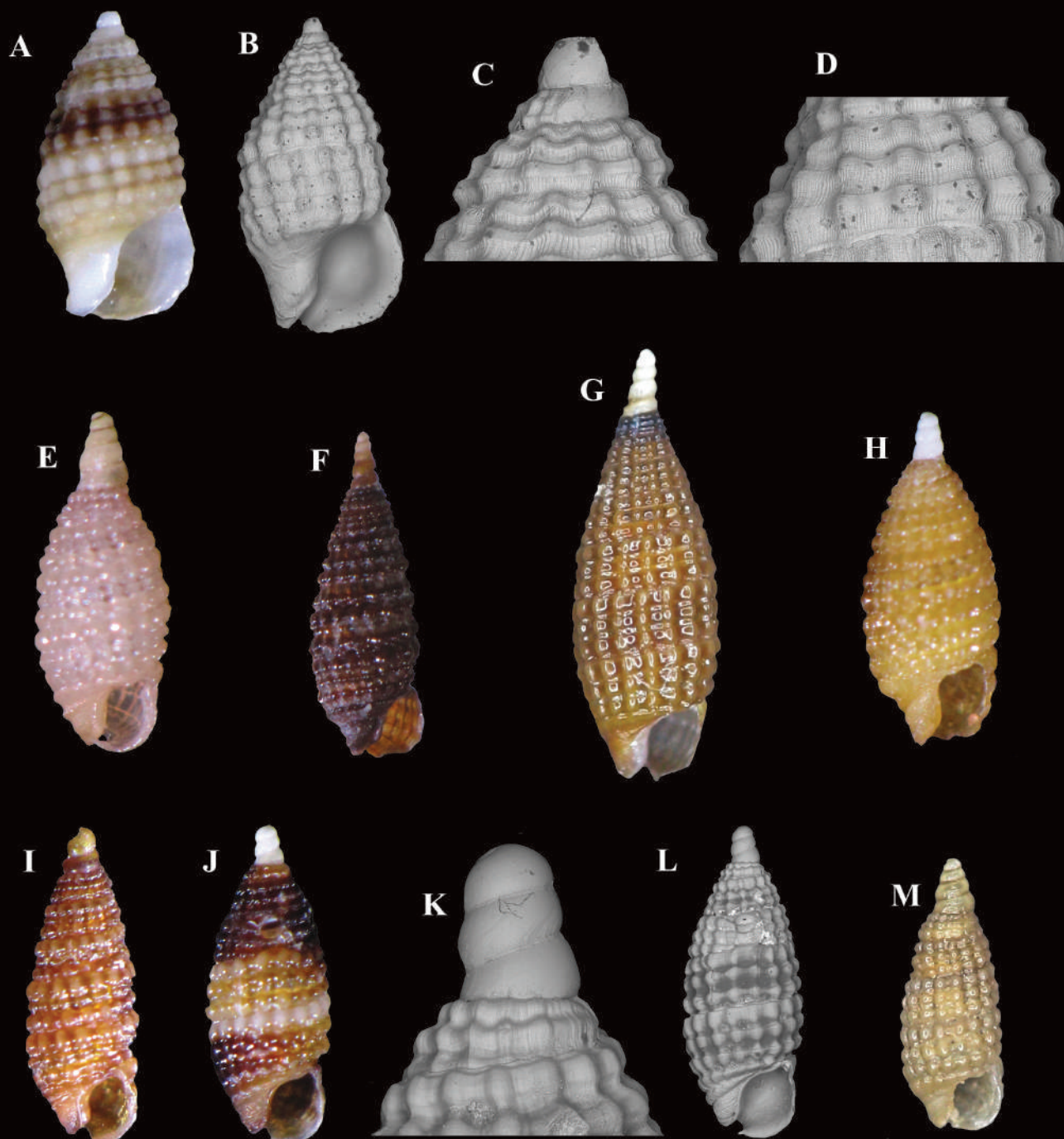
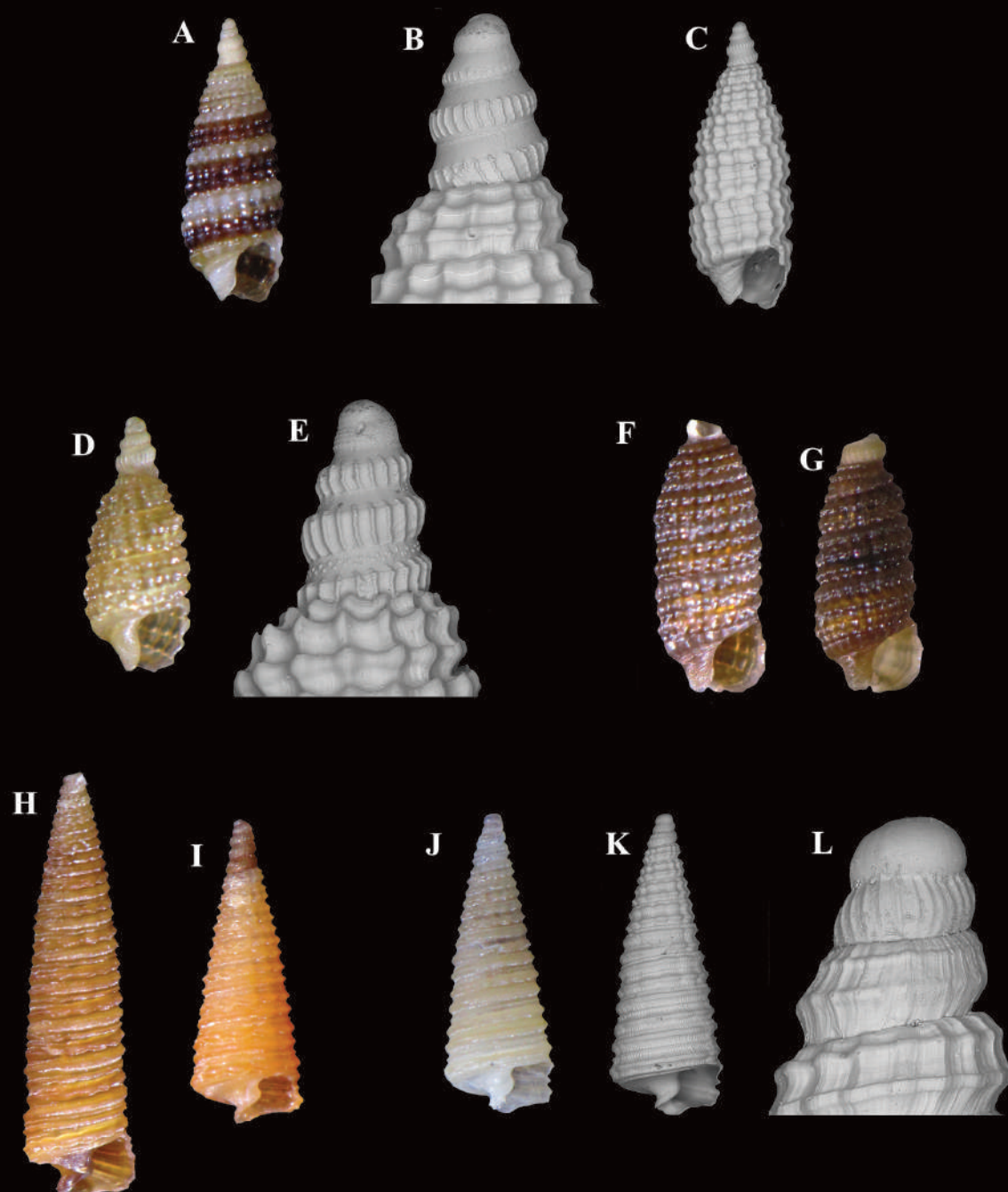


Plate 2. A-D. *Jocular bogusae* Cecalupo & Perugia, 2018, 2.60 x 1.30 mm, protoconch damaged, New Caledonia, Koumac area; D. teleoconch detail; E. *Jocular dakoi* Cecalupo & Perugia, 2018, 1.72 x 0.72 mm, New Caledonia, Koumac area; F. *Jocular ferrii* Cecalupo & Perugia, 2014, 1.90 x 0.75 mm, New Caledonia, Infernet Reef; G. *Jocular leguyaderi* Cecalupo & Perugia, 2013, 3.35 x 1.20 mm, New Caledonia Nouméa area; H. *Jocular opulentus* Cecalupo & Perugia, 2013, 2.20 x 0.92 mm, New Caledonia, Koumac area; I. *Jocular tieensis* Cecalupo & Perugia, 2017, 2.05 x 0.75 mm, New Caledonia, Nouméa area; J-L. *Jocular trifasciatus* sp. nov. holotype (MNHN-2000-38743), 2.05 x 0.80 mm, protoconch 0.30 x x 0.20 mm, New Caledonia, Koumac area; M. *Jocular giovanolii* Cecalupo & Perugia, 2013, 1.72 x 0.72 mm, New Caledonia Nouméa area, Infernet Reef.



Plare 3. A-C. *Marshallloopsis alterna* n. sp. holotype (MNHN-IM-2000-38744), 2.47 x 0.90 mm, protoconch 0.47 x 0.27 mm, New Caledonia, Great Koumac Reef; D-E. *Marshallloopsis spinosa* Cecalupo & Perugia, 2013, 1.62 x 0.65 mm, protoconch 0.47 x 0.25 mm, New Caledonia, Koumac area; F-G. *Prolixodens oleagina* Cecalupo & Perugia, 2017, F. 2.15 x 0.75 mm, New Caledonia, Koumac area; G. 1.90 x 0.75 mm, New Caledonia, Koumac area; H-I. *Retilaskeya philippinensis* Cecalupo & Perugia, 2012, 6.40 x 1.65 mm, I. 3.25 x 1.23 mm, New Caledonia, Koumac area; J-L. *Mendax tenuicostata* Cecalupo & Perugia, 2017, 4.00 x 1.50 mm, protoconch 0.40 x 0.31 mm, New Caledonia, Koumac area, Ilot Tangadiou.

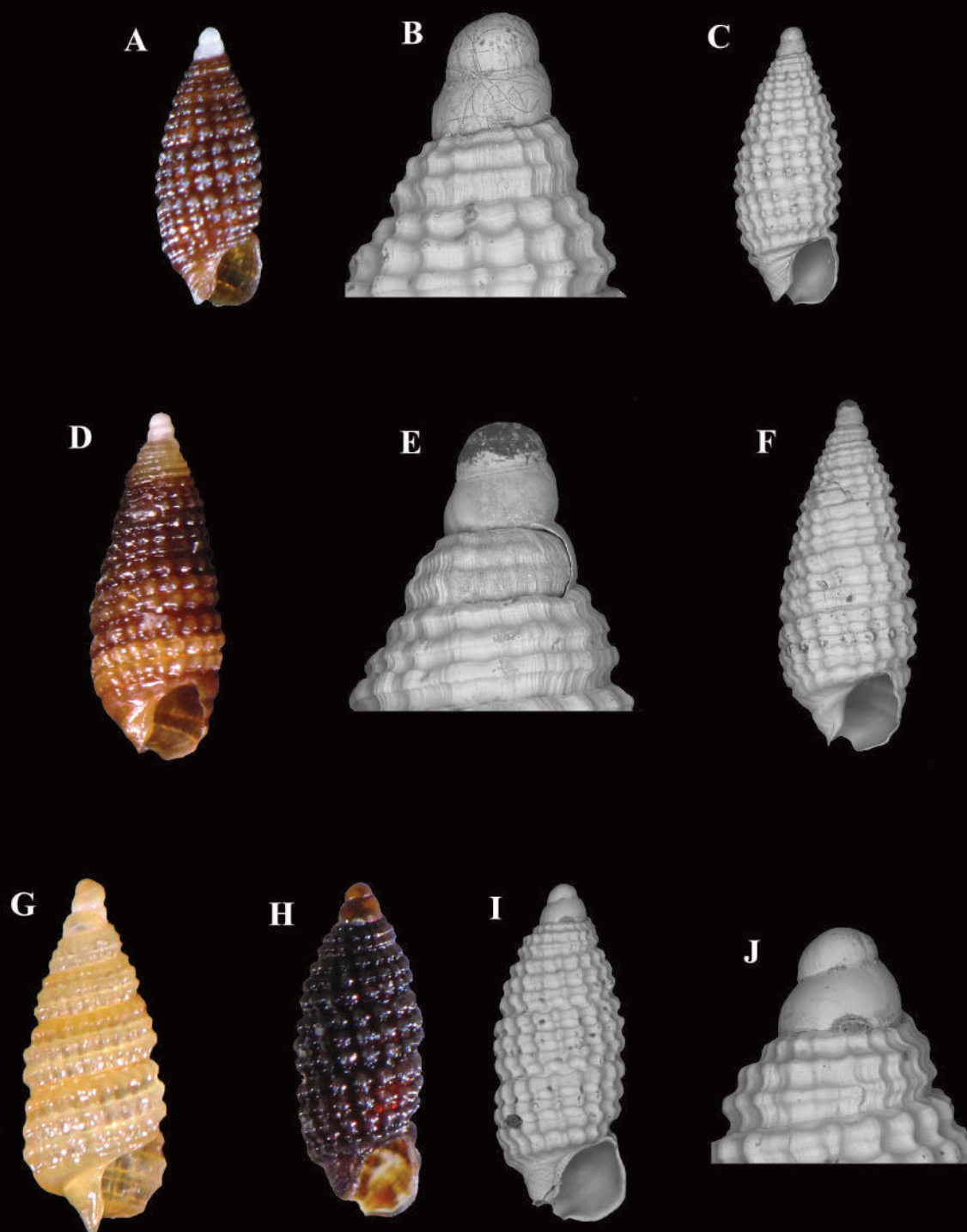


Plate 4. **A-C.** *Specula apexalba* n. sp. holotype (MNHN-IM-2000-38745), 2.12 x 0.84 mm, protoconch 0.25 x 0.20 mm, New Caledonia, Koumak area; **D-F.** *Specula fuscata* n. sp. holotype (MNHN-IM-2000-38748), 3.05 x 1.22 mm, protoconch 0.35 x 0.24 mm, New Caledonia, Koumak area, Ilot Tangadiou; **G.** *Specula gilvufasciata* n. sp. holotype, (MNHN-IM-2000-38749), 2.30 x 0.95 mm, New Caledonia, Koumak area; **H-J.** *Specula koumacensis* n. sp. holotype (MNHN-IM-2000-38750), 1.68 x 0.65 mm, protoconch 0.25 x 0.22 mm, New Caledonia, Koumak area.

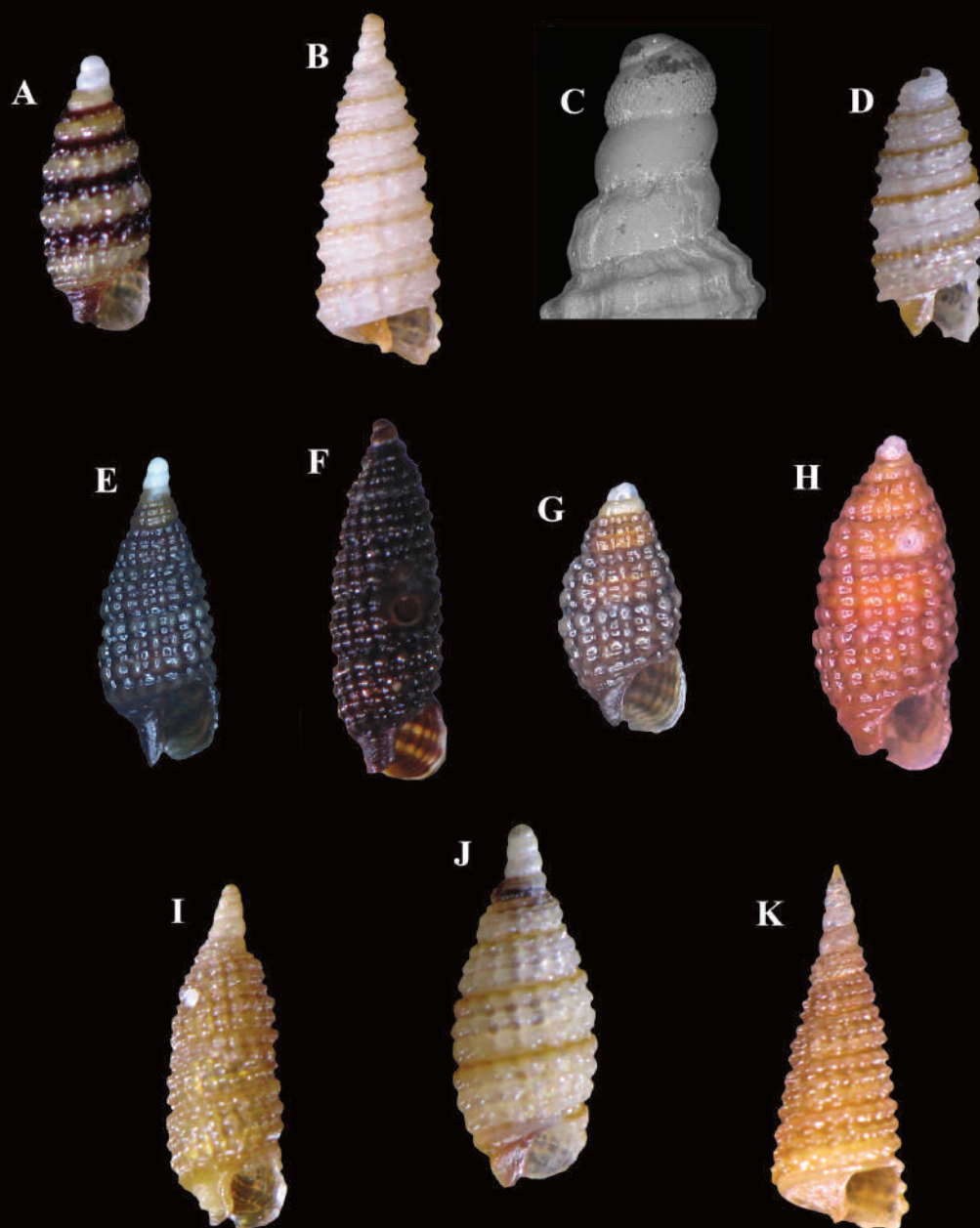
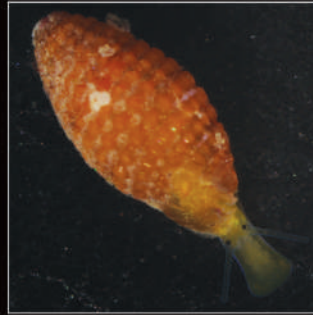


Plate 5. **A.** *Specula santalensis* Cecalupo & Perugia, 2017, 1.50 x 0.60 mm, New Caledonia, Koumac area; **B-C.** *Specula seragakiensis* Cecalupo & Perugia, 2019, 3.01 x 1.10 mm, protoconch 0.42 x 0.25 mm, New Caledonia, Nouméa area, Mberé Reef; **D.** *Specula seragakiensis* Cecalupo & Perugia, 2019, 2.00 x 0.90 mm, New Caledonia, Nouméa area, Mberé Reef; **E.** *Specula* sp., 2.05 x 0.85 mm, New Caledonia, Koumac area; **F.** *Specula* sp., 2.45 x 0.75 mm, New Caledonia, Koumac area; **G.** *Sundaya rufula* n. sp. holotype (MNHN-IM-2000-38756), 1.45 x 0.72 mm, New Caledonia, Koumac area; **H.** *Sundaya pupoides* n. sp. holotype (MNHN-IM-2000-38755), 2.30 x 0.95 mm, New Caledonia, Koumac area, Ilot Tangadiou; **I.** *Synthopsis noumeaensis* Cecalupo & Perugia, 2017, 2.07 x 0.72 mm, New Caledonia, Koumac area; **J.** *Synthopsis sebastianoï* Cecalupo & Perugia, 2012, 2.25 x 0.93 mm, New Caledonia, Koumac area; **K.** *Tubercliopsis sebyi*, Cecalupo & Perugia, 2012, 2.18 x 0.82 mm, New Caledonia, Koumac area, Ilot Tangadiou.



A *Retilaskeya philippinensis*
Cecalupo & Perugia, 2012



B *Joculator* sp.



C *Joculator* sp.



D *Horologica barrieria*
Nützel, 1998



E *Horologica barrieria*
Nützel, 1998



F *Joculator coffeus*
Cecalupo & Perugia, 2013



G *Specula santalensis*
Cecalupo & Perugia, 2017



H *Joculator arduinii*
Cecalupo & Perugia, 2012



I *Marshallopsis boucheti*
Cecalupo & Perugia, 2012



J *Clathropsis* sp.



K *Tubercliopsis miranda*
Cecalupo & Perugia, 2012

Plate 6

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ABSTRACT

A new fossil *Persististrombus* is described, and compared with similar species.

RESUME

Un nouveau fossile *Persististrombus* est décrit et comparé à des espèces similaires.

INTRODUCTION

The eastern Tethys radiation of the genus *Persististrombus* is known from several fossil species, the older of which is *P. gijskronenbergi* (Harzhauser, 2007) from the Aquitanian of south Oman. Other species slightly younger have been found in Tanzania (*P. kronenbergi* Harzhauser, 2009); in India *P. daviesi* (Dey, 1962) and *P. deperditus* (Sowerby, 1840) are recorded. Recently a new fossil species with shell characters corresponding to *Persististrombus* was collected at an unprecise locality near Bogor, Java.

ABBREVIATIONS

GVC: Goran Verriest collection, Zingem, The Netherlands
MZB: Museum Zoologicum Bogoriense, Bogor, Java, Indonesia
NHM: Natural History Museum, London, Great Britain
VLC: Virgilio Liverani collection, Faenza, Italy

RESULTS

SYSTEMATIC

Superfamily Stromboidea
Family Strombidae
Genus *Persististrombus*
Species *Persististrombus bogoriense* sp. nov.

Type material: holotype in MZB Moll. Foss. n. 0055, size 56.5 mm; paratype 1 in MZB Moll. Foss. n. 0056, mm 48.4. Paratypes n. 2, 58 mm; n. 3, 54 mm; n. 4, 51.5 mm; n.5, 44 mm in VLC; paratype 6, 50.2 mm in GVC. Other material examined: 22 specimens in VLC, 15 specimens in GVC..

Description: Shell small for the genus, 40–60 mm long, with about eight whorls, protoconch incomplete made probably of two–three smooth whorls. First four whorls of spire rounded, with densely arranged and fine axial ribs with rare varices; last three whorls with angular shoulder, with pointed knobs becoming progressively bigger and more spaced. On ventral side of body whorl, most specimens show a smooth carina at shoulder; on dorsal side there are average five high pointed knobs at shoulder, the last one near the lip border. Dorsum

shiny, with very fine spiral cords sculpture crossed by very fine axial growth lines, and a second row of two–three small rounded tubercles in line with the stromboid notch. Columella smooth, anterior end curved towards dorsum; callus moderately thickened especially towards anterior canal. Stromboid notch well evident and u-shaped, stromboid flange large and thin; lip smooth inside with rounded rim thickened from internal side; adapical end of lip attached to shoulder of previous whorl, leaving a large posterior canal. Lip corner inclined abapically.

Etymology: from the main city in the area where all specimens were collected, Bogor, West Java.

Type stratum: undefined level in the Middle–Upper Miocene

DISCUSSION

Until now in the fossil record of Indonesia no species attributed to *Persististrombus* were known. However, similar shells are for example in the group of the *Spinatus* (Liverani & Wieneke, 2022). An other shell that looks similar is at the moment retained in genus *Dolomena*, *D. sedanensis* (Martin, 1899), the syntype illustrated in www.stromboidea.de is very similar in spire sculpture and shoulder of last whorl, but the corner of the lip is adapically expanded and the second row of small tubercles on dorsum is missing. The specimen figured with the original description (in Martin, 1899, pl. XXIX, fig. 416, 416a, 416b) is even more similar as it have the ventral shoulder carina typical of *P. bogoriense* sp. nov.. *Dolomena sedanensis* should probably be transferred to *Persististrombus*, as it resembles the indian *P. daviesi* (Dey, 1962) in shape of the lip and dorsal sculpture. Both these last species differ anyway from *P. bogoriense* sp. nov., whose characters remember some *Persististrombus* of the tethyan Miocene (Harzhauser & Kronenberg, 2013), and even remember the recent *P. latus* form *portgentilensis* (Bernard, 1984) with his high and sharp nodules at shoulder, the smooth dorsum and the corner of the lip abapically sloping. However, there are no proofs to link *P. bogoriense* sp. nov. directly to the tethyan lineage of *Persististrombus*, since no similar fossils have been found elsewhere in older sediments. *P. deperditus* (Sowerby, 1840) from India is different in having stronger spiral sculpture and smaller shoulder knobs. All the cited species differ from *P. bogoriense* in having less developed shoulder spines, not having a second row of nodules, and someone have an adapical expansion of the lip corner.

ACKNOWLEDGEMENTS.

Many thanks to Ulrich Wieneke (Murnau, Germany) for the permission to use some images contained in www.stromboidea.de.

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Plate 1. 1. *Persististrombus bogoriense* sp. nov., holotype, mm 56.5;
2. paratype n.2, 58 mm; 3. paratype n.1, 48.2 mm; 4. smaller specimen examined, 40.7 mm.



Plate 2. 1, *Persististrombus daviesi* (Dey, 1962), original figures from Paleontologia Indica.
 2, "*Dolomena*" *sedanensis* (Martin, 1899), original figure from the description.
 3, 4, *Persististrombus deperditus* (Sowerby, 1840), syntypes in NHM, London, Great Britain. Copyright NHML.
 5 *Persististrombus* (*Thetystrombus*) *latus* form *portgentilensis*, Gabon, 96 mm.

**DESCRIPTION OF *RAPHITOMA MINAE* SP. NOV. (MOLLUSCA, GASTROPODA, RAPHITOMIDAE)
FROM THE MEDITERRANEAN (AEGEAN SEA, GREECE)**

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KEYWORDS

Conoidea, Greece, Mediterranean Sea, new species, *Raphitoma*

ABSTRACT

A new species of *Raphitoma* Bellardi, 1847 from the Hellenic waters of the Aegean Sea is here described based on 13 specimens. *Raphitoma minae* is identified by its protoconch and teleoconch characters. It belongs to a group of species that have glossy surface of the teleoconch, and paucispiral protoconch suggestive of a lecithotrophic larval development.

RESUME

Une nouvelle espèce de *Raphitoma* Bellardi, 1847 des eaux Helleniques de la mer Égée est décrite d'après 13 spécimens. *Raphitoma minae* est identifiée par les caractères de sa protoconche et de sa téléoconche. La protoconche est paucispirale ce qui suggère un développement larvaire lécithotrophique.

INTRODUCTION

The Raphitomidae Bellardi, 1875 is one of the most diverse families of Conoidea J. Fleming, 1882 (Kantor & Taylor 2002; Bouchet *et al.* 2011). Fassio *et al.* (2019) redefined the limits of its type genus *Raphitoma* Bellardi, 1847 in the Mediterranean Sea and the North-eastern Atlantic Ocean to harbour the fossil type species *R. hystrix* Bellardi, 1847 and its surviving descendant *R. pseudohystrix* (Sykes, 1906), certain spiny species such as *R. cordieri* (Payraudeau, 1826) and *R. horrida* (Monterosato, 1884), and those ones that have been in the past grouped within the genus *Philbertia* Monterosato, 1884 which is now accepted as *Raphitoma* Bellardi, 1847. The genus is represented in the Mediterranean Sea by 50 species (Prkić *et al.*, 2020, Kontadakis & Manousis, 2022; Giannuzzi-Savelli *et al.*, 2023; Mbazios *et al.*, 2023), and appears to be a morphologically homogeneous group of fairly uncommon infralittoral species

readily recognizable by their sculptural decoration and colour pattern of their teleoconch (Kontadakis & Manousis, 2022). The ongoing revision of the Hellenic members of the genus (Manousis *et al.*, 2017; Manousis *et al.*, 2018; Kontadakis *et al.*, 2019; Kontadakis & Manousis, 2022) documented 29 species for the area (Manousis, 2023), and recently the new species *Raphitoma aspera* Mbazios, Kontadakis, Ovalis, Polyzoulis, Zeimbekis & Manousis, 2023 was added to the Hellenic fauna (Mbazios *et al.*, 2023). After an exploratory publication on the possibility of poecilogony among the Mediterranean members of the genus *Raphitoma* (Manousis *et al.*, 2017) the matter was re-approached statistically by means of Orthogonal Regression Analysis (ORA) on published data (so that the observed results were not doubted) for congruence with the proposed poecilogony hypothesis, and revealed congruence (Manousis *et al.*, 2019). In due time, and in a work aiming at confirming poecilogony in the genus, Russini *et al.* (2020) used an integrative approach to species delimitation and applied morphology and DNA markers analyses to show, though still inconclusively, that poecilogony has to be the case, at least for the pair of sibling species examined (see also Pelorce & Horst, 2020 for a comment on the relevant controversy on poecilogony in the genus at that time). While studying the Hellenic marine malacofauna we had recently the opportunity to collect along the coasts of the Aegean Sea and examine fresh specimens of an undescribed species of *Raphitoma*, that bear features typical of the genus and at the same time others that apparently distinguish them from all known Mediterranean sympatric cogenes, hence we present them below.

Methods

The collection of the specimens was conducted in various locations of Greece according to Manousis and Galinou-Mitsoudi (2014). For each specimen collected, the following data have been recorded: date, depth, location, size (length), and type of habitat/substrate. For the species nomenclature updates (December 2023) the World Register of Marine

Species was used. Protoconch whorls were counted according to Verduin (1976), the measurement of the protoconch dimensions was performed at side view with its transition to the teleoconch at the far left, and the measurement of the protoconch maximum diameter was performed at top view according to Gofas and Oliver (2010). The slenderness (h/w) of the shell was estimated including the outer lip of the aperture in the shell's width. The specimens are deposited in the private collections of C. Kontadakis, P. Ovalis, and G. Zaminos who give access to the biological material for observation after arrangement. The holotype of *Raphitoma minae* Kontadakis, Ovalis, Zaminos, 2023 is deposited at MNHN-IM-2000-29036.

RESULTS

Abbreviations: **CB:** Coralligenous Bottom; **CCK:** Collection Constantinos Kontadakis; **CPO:** Collection Panayotis Ovalis; **CGZ:** Collection Giannis Zaminos

Raphitoma minae sp. nov., MNHN-IM-2000-29036 (Pl. 1a-l)

SYSTEMATICS:

Superfamily **Conoidea** J. Fleming, 1822

Family **Raphitomidae** Bellardi, 1875

Genus **Raphitoma** Bellardi, 1847

Type Species: *Raphitoma hystrix* Bellardi, 1847⁺ (type by subsequent designation)

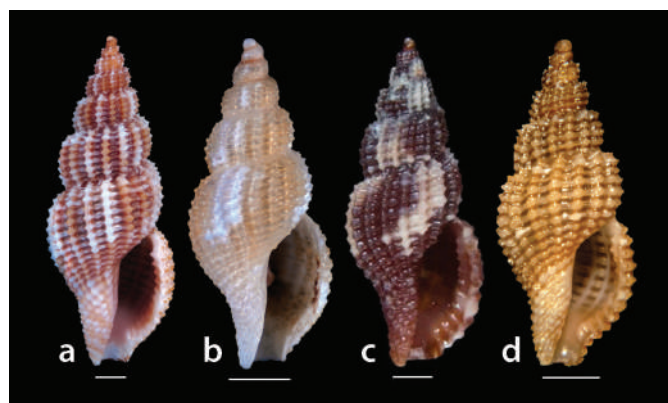


Figure 1: a. *Raphitoma minae* sp. nov. holotype; b. *Raphitoma griseomaculata* Pusateri & Giannuzzi-Savelli, 2018; c. *Raphitoma philberti* (Michaud, 1829); d. *Raphitoma spadiana* Pusateri & Giannuzzi-Savelli, 2012. Barr = 1 mm.

Description of holotype: (Fig. 1a) Shell medium size for the genus, 10.7 mm high and 4.1 mm wide (h/w = 2.6), turritiform, hyaline and translucent. Paucispiral protoconch chestnut brown in colour, with regularly cancellated and convex 1.5 whorls. Protoconch I (embryonic shell) (Pl. 1j, k) 350 µm wide, protoconch II (larval shell) 420 µm wide, exhibiting on its last part a weak keel continuous with the first spiral cord of the teleoconch. The turreted teleoconch consists of 6 convex whorls separated by a conspicuous suture. Moderately wide subsutural ramp. The body whorl occupies some 60% of the total height, is inverted onion in shape, and bears 18 prosocline and narrow axial ribs with interspaces nearly as wide as the ribs, 23 equal in width and equidistant (but the 1st adapical) spiral cords as thin as the interspaces, 9 of which are situated over the suture and the rest 14 below it to the distinct tail of the shell. The spiral cords in their intersections with the axial ribs are smooth, elongated and curved. The relatively high

number of axial ribs and spiral cords endow the shell with a dense woven pullover appearance. The first 2 adapical cords increase rapidly in size and form an oblique and conspicuous shoulder immediately below the suture. The aperture is elongated lanceolate, occupies some 40% of the shells height and exhibits a smooth and slightly sinuous columella in its lower part, angled at its upper part. The anterior siphonal canal is long and wide while the posterior one is deep and narrow. The outer lip exhibits externally the endings of the spiral cords, while internally 12 conspicuous and regularly positioned teeth. Shell surface (Pl. 1l) glossy with dense incremental scars. Background colour universally light chestnut-brown with frequent irregularly placed whitish sections more conspicuous below the suture by the ramp. Though collected also live, soft parts remain unknown.

Type Material examined:

Holotype: (Pl. 1a), shell, 10.7 mm, Saronic Gulf, 37°44'N-23°45'E, 60-80 m, CB, (MNHN)

Paratype 1: (Pl. 1b), live, 9.8 mm, Saronic Gulf, 37°44'N-23°48'E, 60-80 m, CB, CCK

Paratype 2: (Pl. 1c), shell, 9.0 mm, Souda Bay, Crete, 35°29'N-24°12'E, 60-70 m, CB, CGZ

Paratype 3: (Pl. 1d), live, 9.6 mm, Saronic Gulf, 37°44'N-23°45'E, 60-80 m, CB, CPO

Paratype 4: (Pl. 1e), shell, 7.1 mm, Saronic Gulf, 37°44'N-23°45'E, 60-80 m, CB, CPO

Paratype 5: (Pl. 1f), shell, 7.8 mm, Saronic Gulf, 37°44'N-23°45'E, 60-80 m, CB, CPO

Paratype 6: (Pl. 1g), shell, 7.4 mm, Saronic Gulf, 37°44'N-23°45'E, 60-80 m, CB, CPO

Paratype 7: (Pl. 1h), live, 5.3 mm, Saronic Gulf, 37°41'N-23°52'E, 80-100 m, CB, CCK

Paratype 8: (Pl. 1i), shell, 4.4 mm, Souda Bay, Crete, 35°29'N-24°12'E, 60-70 m, CB, CGZ

Variability of mature specimens:

Number of axial ribs 15-18; Number of spiral cords 20-23; Number of apertural teeth 10-12; Shell colour light chestnut-brown to reddish chestnut-brown; White sections frequent to infrequent, and mainly below the suture.

Type Localities: Saronic Gulf and Souda Bay (Crete).

Distribution: Known only from the type localities.

Habitat: The specimens were collected from coralligenous bottoms.

Etymology: This species is named "*minae*" after Constantinos Kontadakis wife Mina.

REMARKS

Raphitoma minae sp. nov. (Pl. 1a-i and Fig. 1a) can easily be distinguished from its sympatric and non sympatric congeners mainly by its paucispiral protoconch, turritiform and hyaline shell, convex whorls, proportionally high body whorl, large number of axial ribs and spiral cords, elongated crosses over the ribs and its dense cancellated appearance. At first glance, *R. minae* sp. nov. exhibits a strong resemblance to *R. pusaterii* Prkić & Giannuzzi-Savelli, 2020 from which it differs in the multispiral protoconch

and microgranular surface of the latter (Prkić *et al.*, 2020). From its paucispiral cogenerates *R. minae* n. sp. differs as follows:

R. griseomaculata Pusateri & Giannuzzi-Savelli, 2018 (Fig. 1b) compared with *R. minae* sp. nov. bears more convex teleoconch whorls, axial sculpture of 20 slightly opisthocline ribs, very narrow subsutural ramp, and its background colour is uniformly straw yellow with ashy blotches (Giannuzzi-Savelli *et al.*, 2018).

R. philberti (Michaud, 1829) (Fig. 1c) bears a subfusiform-acute shell, teleoconch of slightly convex and not stepped whorls, covered with microgranules, and narrow subsutural ramp (Russini *et al.*, 2020).

R. spadiana Pusateri & Giannuzzi-Savelli, 2012 (Fig. 1d) bears axial sculpture of 18 orthocline ribs with interspaces wider ($\times 1.5$) than the ribs, spiral sculpture narrower than the axial ribs which are spaced apart twice their own thickness, and narrow subsutural ramp (Pusateri *et al.*, 2012).

ACKNOWLEDGEMENTS

The authors are grateful to the anonymous referees for their useful contribution to improve the publication and Virginie Heros of MNHN-Paris for handling the holotype deposition process.

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Plate 1: *Raphitoma minae* sp. nov.. a. Holotype, MNHN-IM-2000-29036; b. Paratype 1; c. Paratype 2; d. Paratype 3; e. Paratype 4; f. Paratype 5; g. Paratype 6; h. Paratype 7; i. Paratype 8; j and k. Protoconch; l. Teleoconch surface detail. Barr = 1 mm, unless otherwise indicated.

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KEYWORDS

Cyprus, Mediterranean Sea, Mollusca, New Records

ABSTRACT

The present work is the continuation of the investigation on the marine mollusks of Cyprus by January 2024. It incorporates 55 species out of which 8 are first records, 2 are second records, 20 are first image documented records, and 25 are second image documented records. Essential taxonomic characteristics and ecological data, such as distribution, habitat and origin, are presented.

INTRODUCTION

Marine molluscs comprise some 25% of the benthic fauna worldwide; therefore, any significant change in the molluscan species composition is anticipated to have a substantial effect on the benthic communities altogether (Gofas & Zenetos, 2003). Nevertheless, the molluscan biodiversity can be influenced by exotic species in marine areas close to gateways of introduction such as the Suez Canal in the East Mediterranean Sea, and the progress of the Mediterranean environment becoming subtropical due to the climate change. As human activities have exposed the Mediterranean molluscan fauna to extensive factors of change in the past few decades (Gofas & Zenetos, 2003), faunistic studies aid in monitoring the changes and apprehending their impacts. Cyprus is situated close to the Suez Canal in the Levantine Sea and in the way of the sea currents which are considered responsible for the spread of the Lessepsian migrants from the Suez Canal towards the north and up to the NW Aegean Sea (Manousis & Galinou-Mitsoudi, 2014). The existing published records on the marine molluscan species in the Cypriot waters seem to be rather few (e.g. Di Monterosato, 1899; Stavrinos, 1974; Tornaritis, 1987; Barash & Danin, 1988; Cecalupo & Quadri, 1994a, 1994b, 1995; Buz-

zurro & Greppi, 1997; Orr, 2000; Delongueville & Scaillet, 2008, 2009, 2010a, 2010b; Katsanevakis *et al.*, 2009; Zenetos *et al.*, 2009; Tsiakkios & Zenetos, 2011; Kolokotronis *et al.*, 2023, 2024; Varnava *et al.*, 2024) while at the same time the faunistic status tends to be modified due to natural and anthropogenic impacts. Concurrently, a review of the relevant bibliography reveals the lack of smaller species (i.e. <5 mm) (Kolokotronis *et al.*, 2022) – an indication that the area is undersearched, and a large number of species that have been reported without image documentation. After that, the objective of this work is to continue with the search of the Cypriot seas with emphasis on species of smaller size and give reference information for future studies.

METHODS

Samples were recorded in 15 collection stations (Fig. 1). Sampling, handling and species recognition were conducted according to Manousis & Galinou-Mitsoudi (2014) and Mbazios *et al.* (2020). The scientific names of species are based on WoRMS (January 2024). The representatives of the collected specimens are depicted in Figs. 2 to 5. All specimens are deposited in the premises of D. Kolokotronis and Y. Varnava who give access to the biological material for inspection by appointment.

RESULTS AND DISCUSSION

Abbreviations: AL - Akrotiri, Limassol; AN - Agia Napa; AT - Agia Thekla; ATS - Agia Thekla, Sotira; Be – beached; CCP - Cyclops Cave, Protaras; C1 – first record for Cyprus; C2 – second record for Cyprus; CG - Cavo Greko; DC1 – first image documented record for Cyprus; DC2 – second image documented record for Cyprus; EI - Erroneous Identification; Li – Limnitis; LML - Lady's Mile, Lemesos; LP – Liopetri, Potamos; MB – muddy bottom; Mis – Misidentification; Or – Ormidia; PURC – previous

undocumented report for Cyprus; PL - Psarolimano, Larnaca; RB – rocky bottom; SB – sandy bottom; SBP – sandy bottom with *Poseidonia*; SG – shell grit; SO – Sotira; SPL – 1 km south of Potamos, Liopetri; Xy – Xylophagou; Zy - Zygi

THE RECORDS

BIVALVIA

Solemya togata (Poli, 1791) (Fig. 2a), 1 shell, SPo, Xy, 34°56'N -33°49'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Lembulus pella (Linnaeus, 1758) (Fig. 2b), 1 shell, SB, Xy, 34°56'N -33°49'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Modiolula phaseolina (R. A. Philippi, 1844) (Fig. 2c), 1 shell, 50 m, Or, 34°57'N -33°46'E, DC1 as *Gregariella barbatella* (Cantraine, 1835) in Tornaritis (1987, page 129, Fig. 201a), DC2, description in Gofas *et al.* (2011).

Isognomon bicolor (C. B. Adams, 1845) (Fig. 2d), 2 shells, Be, AT, 34°58'N -33°56'E, C1, description in Garcia *et al.* (2022).

Bornia sebetia (O. G. Costa, 1830) (Fig. 2e), 1 shell, 2 m, SPL, 34°57'N -33°54'E, DC2, DC1 Tornaritis (1987), description in Gofas *et al.* (2011).

Astarte fusca (Poli, 1795) (Fig. 2f), 1 shell, 25 m, MB, Zy, 34°43'N -33°20'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Parvicardium exiguum (Gmelin, 1791) (Fig. 2g), 1 shell, 20 m, SB, Xy, 34°56'N -33°49'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Parvicardium scriptum (Bucquoy, Dautzenberg & Dollfus, 1892) (Fig. 2h), 2 shells, Be, ATS, 34°58'N -33°56'E, DC1 Cossignani & Ardevini (2011), DC2, description in Gofas *et al.* (2011).

Pitar rudis (Poli, 1795) (Fig. 2i), 1 shell, 60 m, SB, LP, 34°58'N -33°53'E, Mis Tornaritis (1987, page 156, Fig. 237a), DC1, description in Gofas *et al.* (2011).

Hiatella arctica (Linnaeus, 1767) (Fig. 2j), 1 shell, 60 m, SB, LP, 34°58'N -33°53'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Thracia phaseolina (Lamarck, 1818) (Fig. 2k), 1 shell, 15 m, SB, CG, 34°58'N -34°05'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Pandora inaequalvis (Linnaeus, 1758) (Fig. 2l), 1 shell, Be, LML, 34°36'N -33°00'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Cardiomya costellata (Deshayes, 1835) (Fig. 2m), 1 shell, 50 m, MB, PL, 34°53'N -33°39'E, PURC Tornaritis (1987), DC1, description in Gofas *et al.* (2011).

GASTROPODA

Diodora dorsata (Monterosato, 1878) (Fig. 3a), 1 shell, Be, LP, 34°58'N -33°53', PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Diodora graeca (Linnaeus, 1758) (Fig. 3b), 1 shell, 20 m, RB, Xy, 34°56'N -33°49'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Emarginula huzardii Payraudeau, 1826 (Fig. 3c), 1 shell, 18 m, RB, Xy, 34°56'N -33°49'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Emarginula punctulum Piani, 1980 (Fig. 3d), 1 live, 50 m, RB, LP, 34°58'N -33°53'E, C1, description in Scaperrotta *et al.* (2011).

Gibbula turbinoides (Deshayes, 1835) (Fig. 3e), 2 shells, Be, LP, 34°58'N -33°53'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Steromphala albida (Gmelin, 1791) (Fig. 3f), 1 shell, Be, LP, 34°58'N -33°53'E, PURC Di Franco *et al.* (2021), DC1, presentation in Cossignani & Ardevini (2011).

Steromphala nebulosa (R. A. Philippi, 1849) (Fig. 3g), 1 shell, Be, LP, 34°58'N -33°53'E, DC1 Tornaritis (1987), DC2, presentation from synonym in Cossignani & Ardevini (2011) and the species confirmation in Affenzeller *et al.* (2017).

Steromphala racketti (Payraudeau, 1826) (Fig. 3h), 1 shell, Be, Xy, 34°57'N -33°49'E, C1, description in Gofas *et al.* (2011).

Fossarus ambiguus (Linnaeus, 1758) (Fig. 3i), 1 shell, 12 m, SB, SPL, 34°57'N -33°54'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Marshallora adversa (Montagu, 1803) (Fig. 3j), 2 shells, 22 m, SG, Xy, 34°56'N -33°49'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Viriola cf. *bayani* Jousseume, 1884 (Fig. 4a), 1 shell, 20 m, RB, CCP, 34°59'N -34°04'E, DC1 Kolokotronis *et al.* (2023), DC2, presentation in Steger *et al.* (2018).

Cycloscala hyalina (G. B. Sowerby II, 1844) (Fig. 4b), 1 shell, Be, LP, 34°58'N -33°53'E, DC1 Cecalupo & Quadri (1994b), C2, presentation in Cossignani & Ardevini (2011).

Eatonina pumila (Monterosato, 1884) (Fig. 4c), 1 shell, 2 m, SB, SPL, 34°57'N -33°54'E, C1, presentation in Cossignani & Ardevini (2011).

Alvania subcrenulata (Bucquoy, Dautzenberg & Dollfus, 1884) (Fig. 4d), 2 shells, Be, Li, 35°10'N -32°44'E, DC1 Varnava *et al.* (2024), C2, presentation in Giannuzzi-Savelli *et al.* (2002).

Rissoa guerini Récluz, 1843 (Fig. 4e), 1 shell, 20 m, RB, CCP, 34°59'N -34°04'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Rissoa scurra (Monterosato, 1917) (Fig. 4f), 3 shells, Be, LP, 34°58'N -33°53'E, Mis Tornaritis (1987, page 47, Fig. 59b), PURC Öztürk *et al.* (2004), DC1, presentation in Giannuzzi-Savelli *et al.* (2002).

Rissoa similis Scacchi, 1836 (Fig. 4g), 1 shell, 12 m, SPL, 34°57'N -33°54'E, DC1 Tornaritis (1987), DC2, detailed description and discussion in Verduin (1985). The species is abundant in the West Mediterranean (Andaluzia, Gofas *et al.*, 2011) and common in all the Mediterranean Sea (Repetto *et al.*, 2005).

Rissoa variabilis (Megerle von Mühlfeld, 1824) (Fig. 4h), 1 shell, Be, LP, 34°58'N -33°53'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Rissoa violacea Desmarest, 1814 (Fig. 4i), 1 shell, 2 m, SB, SPL, 34°57'N -33°54'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Setia turriculata Monterosato, 1884 (Fig. 4j), 4 shells, 12 m, SPL, 34°57'N -33°54'E and Be, Li, 35°10'N -32°44'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Rissoina bertholleti Issel, 1869 (Fig. 4k), 1 shell, Be, AT, 34°58'N -33°56'E, DC1 Kolokotronis *et al.* (2023), DC2, presentation in Cossignani & Ardovini (2011).

Tornus subcarinatus (Montagu, 1803) (Fig. 4l), 1 shell, 12 m, SPL, 34°57'N -33°54'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Crepidula unguiformis Lamarck, 1822 (Fig. 4m), 1 shell, Be, LML, 34°36'N -33°00'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Capulus ungaricus (Linnaeus, 1758) (Fig. 4n), 1 shell, Be, AL, 34°35'N -32°56'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Dermomurex scalaroides (Blainville, 1829) (Fig. 4o), 1 shell, 50 m, RB, PL, 34°53'N -33°39'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Ocenebrina aegeensis Aissaoui, Barco & Oliverio, 2017 (Fig. 4p), 1 live, 60 m, Or, 34°57'N -33°46'E, C1, description in Barco *et al.* (2017).

Gibberula philippii (Monterosato, 1878) (Fig. 4q), 3 shells, Be, LP, 34°58'N -33°53'E, Mis as *G. miliaria* (Linnaeus, 1758) Tornaritis (1987), PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Granulina marginata (Bivona e Bernardi, 1832) (Fig. 4r), 2 shells, 2 m, SB, SPL, 34°57'N -33°54'E and AT, 34°58'N -33°56'E, PURC Tornaritis (1987), DC1, description in Gofas *et al.* (2011).

Pleurotomoides gracilis (Montagu, 1803) (Fig. 4s), 1 shell, 50 m, RB, AN, 34°57'N -33°59'E, El Orr (2000), C1, description in Gofas *et al.* (2011).

Villiersiella attenuata (Montagu, 1803) (Fig. 4t), 1 shell, Be, LP, 34°58'N -33°53'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Omalogyra disculus Palazzi, 1988 (Fig. 4u), 1 shell, 12 m, RB, SPL, 34°57'N -33°54'E, C1, presentation in WoRMS (<https://www.marinespecies.org/aphia.php?p=image&pic=57807&t>

[id=181094](#)) and Palazzi (1988) with short description.

Folinella excavata (R. A. Philippi, 1836) (Fig. 4v), 1 shell, 20 m, RB, Xy, 34°56'N -33°49'E, PURC Tornaritis (1987), DC1, description in Gofas *et al.* (2011).

Odostomella bicincta (Tiberi, 1868) (Fig. 5a), 1 shell, Be, AT, 34°58'N -33°56'E, C1, description in Gofas *et al.* (2011).

Pyrgiscus rufus (R. A. Philippi, 1836) (Fig. 5b), 1 shell, Be, AL, 34°35'N -32°56'E, DC1 Tornaritis (1987), DC2, description in Gofas *et al.* (2011).

Turbonilla pusilla (R. A. Philippi, 1844) (Fig. 5c), 1 shell, 18 m, SBP, Xy, 34°56'N -33°49'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Ebala nitidissima (Montagu, 1803) (Fig. 5d), 1 shell, 12 m, MB, SPL, 34°57'N -33°54'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Retusa umbilicata (Montagu, 1803) (Fig. 5e), 2 shells, Be, Li, 35°10'N -32°44'E, PURC Tornaritis (1987), DC1, description in Gofas *et al.* (2011).

Pyrunculus fourierii (Audouin, 1826) (Fig. 5f), 2 shells, 20 m, MB, CCP, 34°59'N -34°04'E, PURC Öztürk *et al.* (2004), DC1, description in Tringali & Oliverio (2001) and presentation in Cossignani & Ardovini (2011).

Philine catena (Montagu, 1803) (Fig. 5g), 1 shell, Be, Li, 35°10'N -32°44'E, PURC Öztürk *et al.* (2004), DC1, description in Gofas *et al.* (2011).

Petalifera gravieri (Vayssièrre, 1906) (Fig. 5h), 1 shell, 2 m, SB, SPL, 34°57'N -33°54'E, PURC Öztürk *et al.* (2004), DC1, presentation in Cossignani & Ardovini (2011).

Williamia gussoni (O. G. Costa, 1829) (Fig. 5i), 1 shell, 12 m, RB, SPL, 34°57'N -33°54'E, Mis as *Addisonia lateralis* (Requien, 1848) Tornaritis (1987), DC2, description in Gofas *et al.* (2011) and taxonomical information in van Aartsen *et al.* (1984).

Ovatella firminii (Payraudeau, 1826) (Fig. 5j), 1 shell, Be, ATS, 34°58'N -33°56'E, PURC Öztürk *et al.* (2004), DC1, The specimen bears a smooth protoconch I of 0.5 whorls, and fine spiral striation on protoconch II (Fig. 5k), while its teleoconch (Fig. 5j) the diagnostic morphological characters of the species according to Brunet & Capdevila (2005) and Rolán (2011).

DISCUSSION

The present work is a continuation of our investigation on the marine molluscs of Cyprus. As before (Kolokotronis *et al.*, 2024), we consider the Island as comprising a single geographical entity and we handle zoogeographical issues accordingly by using place names of both Greek-Cypriot and Turkish-Cypriot communities. It incorporates 55 species out of which 8 are first records, 2 are second records, 20 are first image documented records, and 25 are second image documented records while almost half of the presented species are of a size <5 mm. As observed in the results section of this work, a large proportion of the first reports for the Island refer to species described

mainly from the West and Central Mediterranean Sea (e.g. Cachia *et al.*, 1996, 2001; Cecalupo *et al.*, 2008; Cossignani & Ardovini, 2011; Gofas *et al.*, 2011), and the Levantine Sea (e.g. Barash & Danin, 1992), an indication that the local biodiversity is in need of farther and thorough revision hence the necessity of cooperation between the two ethnic communities. In essence, the Cypriot molluscan biodiversity is not explored adequately yet, and more species are waiting to see the light of publicity. The clean oligotrophic waters of the East Mediterranean Sea, the variety of substrates, depths and costal length and diversity, the climate change as well as the human activities (e.g. navigation, expansion of the Suez Canal) seem to be in support of our anticipations. The climate change transformation of the Mediterranean Sea, in particular, from temperate to subtropical environment and the human activities that induce an increase in the alien biodiversity by means of species introduction from tropical and subtropical seas make ever more crucial for the scientists to turn and focus their attention on those effects on the mollusks' diversity of the Island. Moreover, any new alien record comprises an alert signal for its expansion, distribution and future effects on the whole Mediterranean Sea environment. The work continues on all molluscan families and expands in more areas and depths of the Cypriot Seas.

ACKNOWLEDGEMENTS

The authors are grateful to the anonymous referees for their useful contribution to improve the publication.

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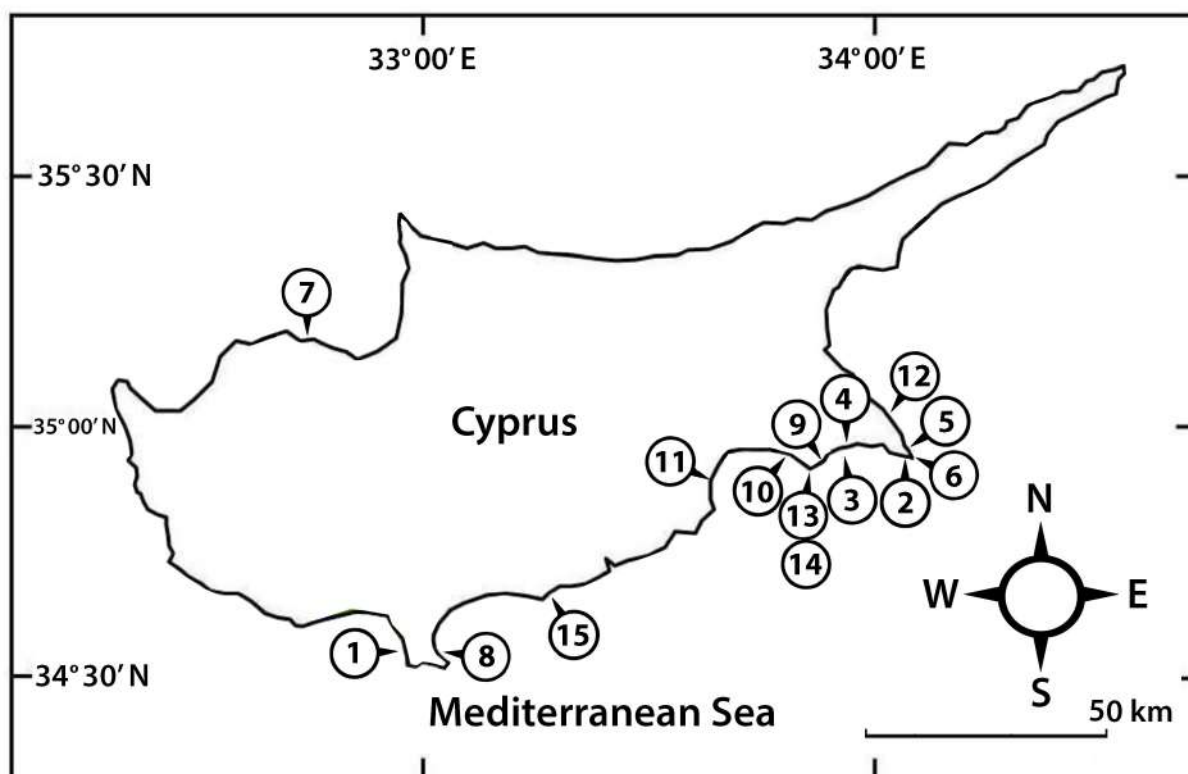


Figure 1: Map of Cyprus with locations mentioned in the text: 1. AL - Akrotiri, Limassol; 2. AN - Agia Napa; 3. AT - Agia Thekla; 4. ATS - Agia Thekla, Sotira; 5. CCP - Cyclops Cave, Protaras; 6. CG - Cavo Greko; 7. Li - Limnitis; 8. LML - Lady's Mile, Lemesos; 9. LP - Liopetri, Potamos; 10. Or - Ormidia; 11. PL - Psarolimano, Larnaca; 12. SO - Sotira; 13. SPL - 1 km south of Potamos, Liopetri; 14. Xy - Xylophagou; 15. Zy - Zygi.

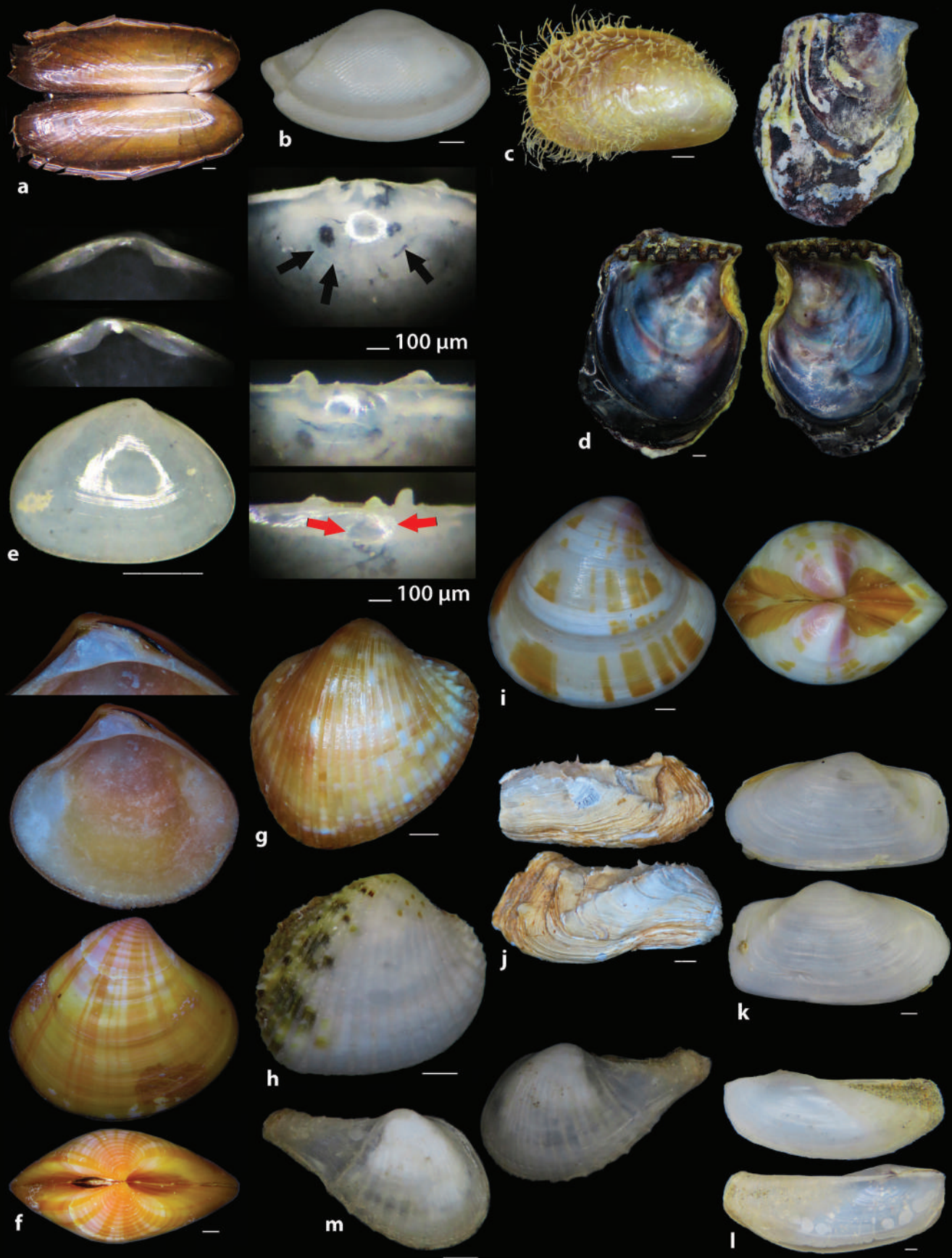


Figure 2: a. *Solemya togata*; b. *Lembulus pella* (Linnaeus, 1758); c. *Modiolula phaseolina* (R. A. Philippi, 1844); d. *Isognomon bicolor* (C. B. Adams, 1845); e. *Bornia sebetia* (O. G. Costa, 1830), black arrows indicate limits of prodissococonch II, red arrows indicate limits of prodissococonch I; f. *Astarte fusca* (Poli, 1795); g. *Parvicardium exiguum* (Gmelin, 1791); h. *Parvicardium scriptum* (Bucquoy, Dautzenberg & Dollfus, 1892); i. *Pitar rudis* (Poli, 1795); j. *Hiatella arctica* (Linnaeus, 1767); k. *Thracia phaseolina* (Lamarck, 1818); l. *Pandora inaequalis* (Linnaeus, 1758); m. *Cardiomya costellata* (Deshayes, 1835). Barr = 1 mm.



Figure 3: a. *Diodora dorsata* (Monterosato, 1878); b. *Diodora graeca* (Linnaeus, 1758); c. *Emarginula huzardii* Payraudeau, 1826; d. *Emarginula punctulum* Piani, 1980; e. *Gibbula turbinoides* (Deshayes, 1835); f. *Steromphala albida* (Gmelin, 1791); g. *Steromphala nebulosa* (R. A. Philippi, 1849); h. *Steromphala racketti* (Payraudeau, 1826); i. *Fossarus ambiguus* (Linnaeus, 1758); j. *Marshallora adversa* (Montagu, 1803). Barr = 1 mm.



Figure 4: a. *Viriola* cfr. *bayani* Jousseaume, 1884; b. *Cycloscala hyalina* (G. B. Sowerby II, 1844); c. *Eatonina pumila* (Monterosato, 1884); d. *Alvania subcrenulata* (Bucquoy, Dautzenberg & Dollfus, 1884); e. *Rissoa guerinii* Récluz, 1843; f. *Rissoa scurra* (Monterosato, 1917); g. *Rissoa similis* Scacchi, 1836; h. *Rissoa variabilis* (Megerle von Mühlfeld, 1824); i. *Rissoa violacea* Desmarest, 1814; j. *Setia turriculata* Monterosato, 1884; k. *Rissoina bertholleti* Issel, 1869; l. *Tornus subcarinatus* (Montagu, 1803); m. *Crepidula unguiformis* Lamarck, 1822; n. *Capulus ungaricus* (Linnaeus, 1758); o. *Dermomurex scalaroides* (Blainville, 1829); p. *Ocinebrina aegeensis* Aissaoui, Barco & Oliverio, 2017; q. *Gibberula philippii* (Monterosato, 1878); r. *Granulina marginata* (Bivona e Bernardi, 1832); s. *Pleurotomoides gracilis* (Montagu, 1803); t. *Villiersiella attenuata* (Montagu, 1803); u. *Omalogyra disculus* Palazzi, 1988; v. *Folinella excavata* (R. A. Philippi, 1836). Barr = 1 mm unless otherwise indicated.

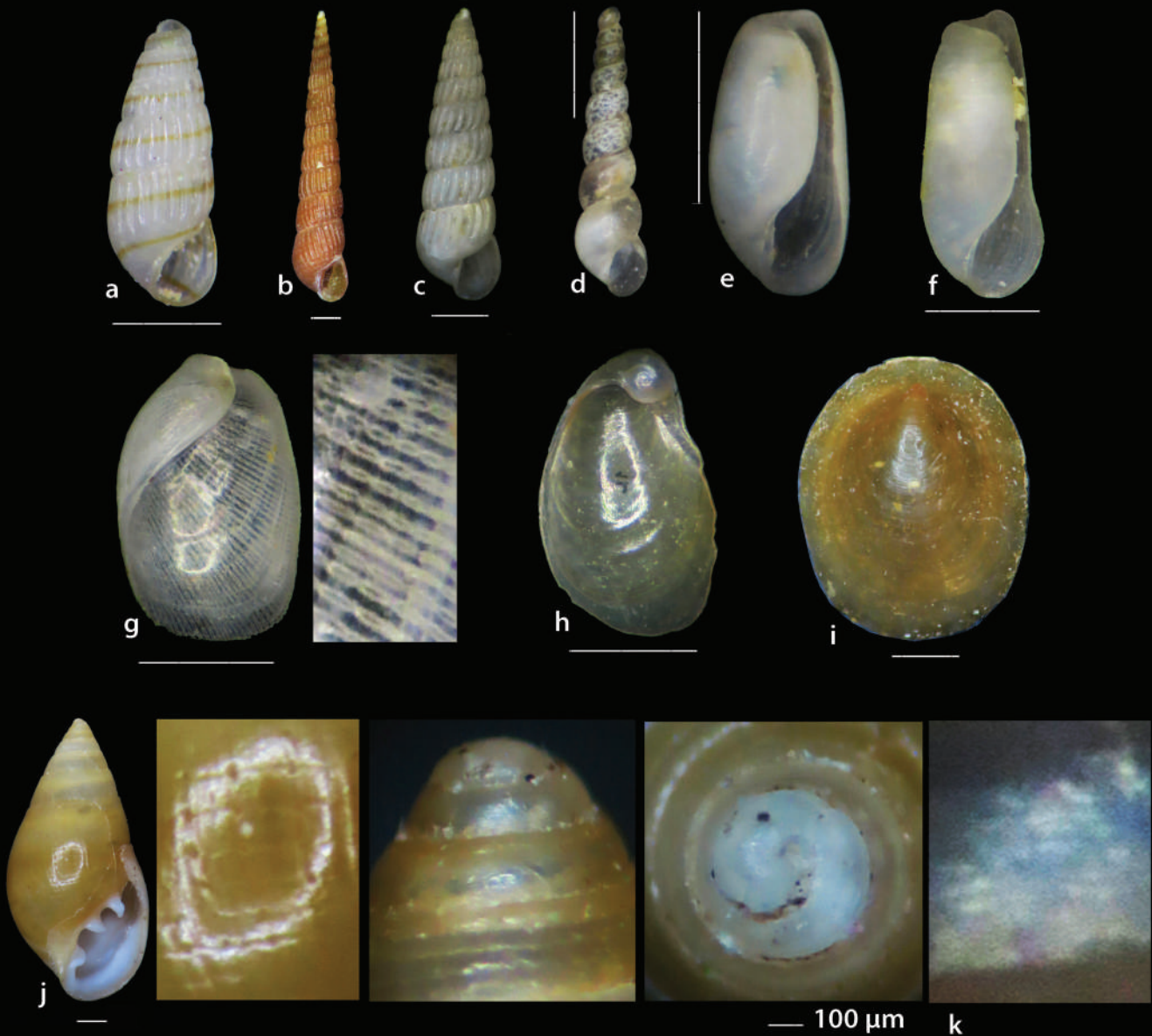


Figure 5: a. *Odostomella bicincta* (Tiberi, 1868); b. *Pyrgiscus rufus* (R. A. Philippi, 1836); c. *Turbonilla pusilla* (R. A. Philippi, 1844); d. *Ebala nitidissima* (Montagu, 1803); e. *Retusa umbilicata* (Montagu, 1803); f. *Pyrrunculus fourierii* (Audouin, 1826); g. *Philine catena* (Montagu, 1803); h. *Petalifera gravieri* (Vayssière, 1906); i. *Williamia gussoni* (O. G. Costa, 1829); j. *Ovatella firminii* (Payraudeau, 1826); k. *O. firminii* protoconch I spiral furrows. Barr = 1 mm unless otherwise indicated.

NEW RECORD OF MARINE MICROGASTROPOD *PELLAMORA DIMINUTA* LASERON, 1956 (GASTROPODA: IRAVADIIDAE) FROM WEIZHOU ISLAND, SOUTH CHINA SEA

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ABSTRACT

Pellamora diminuta Laseron, 1956 (Gastropoda: Iravadiidae), which was the earliest and only found at Darwin, North Australia, is reported herein as a newly recorded species of marine microgastropod from Weizhou Island, South China Sea. The main morphological characters of shell are minute, slender and cylindrical, sculptured by widely spaced and subequal strong spiral ribs, axial sculpture very faint. They are re-described more details by aid of photos in this report, and also the first supplement new locations of geographical distribution of *P. diminuta* in South China Sea

KEYWORDS: microgastropod, Iravadiidae, *Pellamora*, Weizhou Island, South China Sea

INTRODUCTION

The Weizhou Island (21°02'N, 109°06'E) of South China Sea (Figure 1) locates in subtropical monsoon climate zone (Liu et al., 1991; Qi et al., 2003) and the coast 15.6 km, with 6–10 km of sandy beach, high marine biodiversity around the island (Liang, et al., 2010; Jingke & Huang, 2019).

The mollusk fauna is a part of the Indo-West-Pacific region (Huang et al., 2020). There were more than 45 families 300 species of marine microgastropods reported (Chen, 2023; Chen et al., 2023; Chen and Tseng, 2023), of which two species of *Pellamora* Iredale, 1943 (Iravadiidae Thiele, 1928) were collected, i.e., *P. reflecta* Laseron, 1956 and *P. diminuta* Laseron, 1956. In particular, *P. diminuta* Laseron, 1956 which was the earliest and only found at Darwin, North Australia (Laseron, 1956), is found again from South China Sea recently and be a supplement to the article released.

MATERIAL AND METHODS

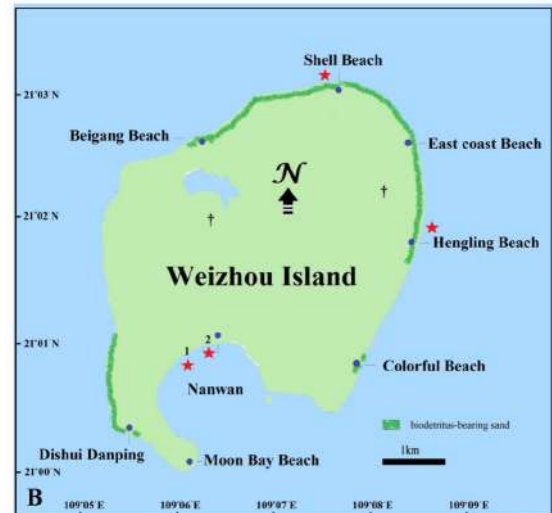


Figure 1. Maps of Weizhou Island coastal area showing collection sites () of *Pellamora diminuta* Laseron, 1956: Shell Beach, Hengling Beach, and Nanwan Beach.

Specimens of *Pellamora diminuta* were collected from coasts of Weizhou Island (Figure 1, B) by hand picking method, deposited in plastic centrifuge tubes and transferred to College of Biology and Pharmacy laboratory of YLNU for identification and further study.

The measurements of shell were taken following the methods of Chen et al. (2023), Houart et al. (2017), Okutani et al. (2017), Rubio & Rolán (2018) and Van der Linden & Eikenboom (1992).

Abbreviations: YLNU, Yulin Normal University, Guangxi, China.

Material Examined

Nanwan Beach 1, Weizhou Island, China, 21°01'34"N, 109°06'16"E, coll. Qing-Xia, He, 26 December 2019 (YLNU191226h23). (Figure 2, A-F)

Nanwan Beach 2, Weizhou Island, China, 21°01'33"N, 109°06'18"E, coll. Qing-Xia, He, 26 December 2019 (YLNU191226h1).

Shell Beach, Weizhou Island, China, 21°04'06"N, 109°07'45"E, coll. W. J. Chen, 11 September 2019 (YLNU190911a7).

Hengling Beach, Weizhou Island, China, 21°02'48"N, 109°08'38"E, coll. W. J. Chen, 27 December 2019 (YLNU191227d4).

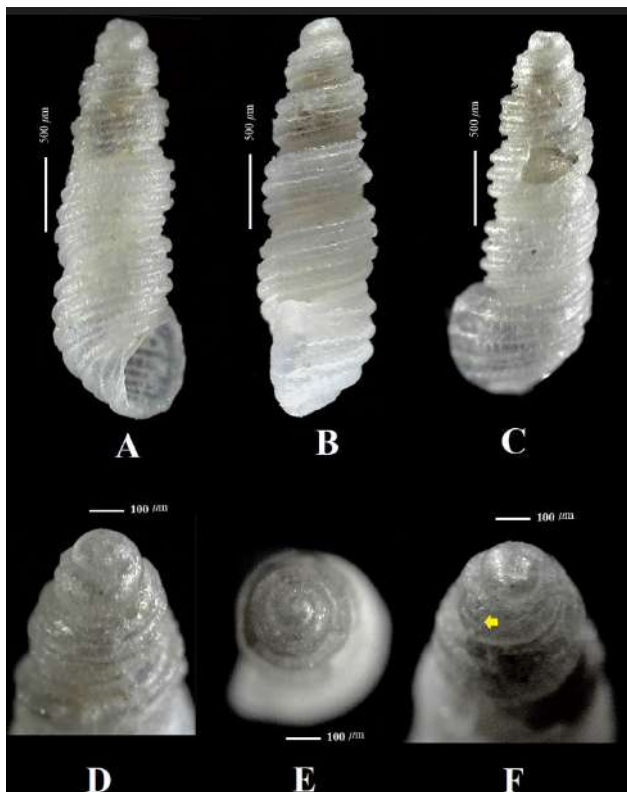


Figure 2. *Pellamora diminuta* Laseron, 1956 shell collected from Nanwan Beach (1) of Weizhou Island on 26 December 2019, height 2.4 mm; A, apertural view; B, side view; C, abapertural view; D–F, top views of shell whorl sculpture. Note an arrow is sinusigera (F).

**RANGE EXTENSION OF *CORIOPHORA LESSEPSIANA* ALBANO, BAKKER & SABELLI, 2021
IN THE MEDITERRANEAN: FIRST RECORD FROM THE SOUTHERN COAST OF TÜRKİYE**

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ABSTRACT

We report the finding of the Lessepsian migrant *Coriophora lessepsiana* Albano, Bakker & Sabelli, 2021 at the western shore of the Gulf of Antalya on the southern coast of Turkey in October 2022. The species was collected in the Mediterranean for the first time at the Israeli coast in 2018. The present record is the first from the Turkish coasts and the second from the Mediterranean.

INTRODUCTION

The entry of non-indigenous species of molluscs and other animal phyla of Indo-Pacific origin into the Mediterranean through the Suez Canal, the so-called Lessepsian migration, has been well documented in recent literature (for example, Steger et al., 2018; Ovalis & Mifsud, 2019; Zenetos & Galanidi, 2020). Because of their proximity to the Suez Canal, the coasts of Israel and Egypt are expected to be where Lessepsian species first establish their footholds in the southeastern Mediterranean (the Levantine Sea). In a recent paper, Albano et al. (2021) documented 52 non-indigenous molluscs in the Levantine Sea and described two of them as new species. One of the new species, *Coriophora lessepsiana* Albano, Bakker & Sabelli was found in the Red Sea at the Gulf of Aqaba (type locality) and also at the Israeli coast north of Haifa. At that time there was no record of the species from elsewhere in the Mediterranean. Here, we report the recent finding of *C. lessepsiana* from the western shore of the Gulf of Antalya on the southern coast of Turkey.

METHODS

The collection site was near the north shore (36.5213° N, 30.5496° E) of a small bay along the ruins of the antique city of Phaselis at the western shore of the Gulf of Antalya. A sample (~400 ml) of shell grit (sand mixed with shells and shell fragments) was taken by hand from several spots at approximate depths between 2 m and 3.5 m on 12 October 2022 (Figure 1). To obtain a sample as representative as possible of the recent mollusc fauna of the locality, shell grit was taken from the sediment surface. The sample was sieved using tap water through sieves with mesh openings of 4 mm, 2 mm and 0.5 mm. Resulting four fractions (including the material that had passed through the 0.5 mm sieve) were dried and then examined for mollusc shells either with the naked eye or under a stereomicroscope. Shell dimensions were measured with a stereomicroscope using a calibrated eyepiece reticle.

Shell photographs taken through microscopes at different focus levels were stacked using Helicon Focus version 8.2 (Helicon Soft). The specimen of *C. lessepsiana* (CM 183245) has been deposited in the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, U.S.A.

RESULTS AND DISCUSSION

The sea bottom at the collection locality was covered with large boulders interspaced with small rocks and shell grit (Figure 1). There were no *Posidonia* or other seagrasses.

One fresh, intact shell matching the original description of *C. lessepsiana* in Albano et al. (2021) was found in the sample (Figure 2A-C). The sinistral shell was 3.5 mm high (from the apex's tip to the siphonal canal's bottom) and 1.3 mm wide (across the body whorl). The protoconch had about five whorls. Protoconch II had a single spiral carina crossing over fine radial ribs (Figure 2D). The anterior siphonal canal opened into the aperture near the base of the columella. On the outside a short extension of the aperture partially covered the beginning of the siphonal canal (Figure 2E).

The collection locality at the Turkish coast is more than 1000 km along the coastline and approximately 560 km (as the crow flies) from the location at the Israeli coast where *C. lessepsiana* was first found in the Mediterranean in October 2018. Although we cannot know when the species first entered the Mediterranean, our record almost exactly four years after its first record in the Levantine Sea is an indication that *C. lessepsiana* may have already spread in the Mediterranean.

ACKNOWLEDGEMENT

We thank Tim Pearce for an informal review of an earlier draft.

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Figure 1: First author removing shell grit at the collection locality.

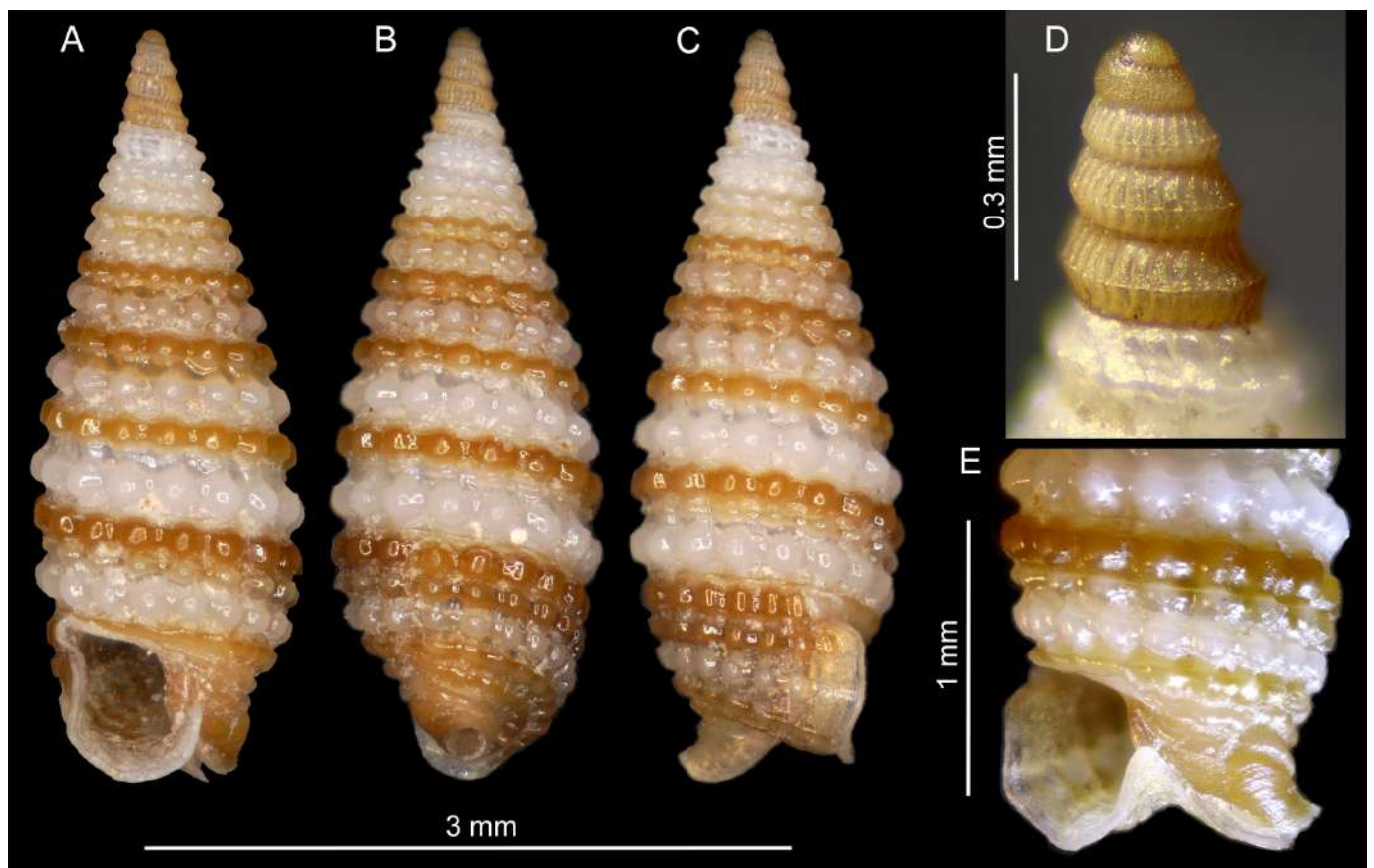


Figure 2: *Coriophora lessepsiana* Albano, Bakker & Sabelli, 2021 A-B. Entire specimen from the front, back and palatal side; C. Protoconch; D. Siphonal canal.

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INTRODUCTION :

Essayant de recevoir avec régularité les nouvelles du monde en matière de volutes, et admirateur du travail de Patrice Bail qui est la référence mondiale en matière de Volutidae, j'ai été surpris par la photo d'une nouvelle espèce *Voluta thevenini* Cossignani et Allary 2024 produite dans le numéro 122 de janvier 2024 de Malacologia Mostra Mondiale (fig 1).

A ma connaissance tous les malacologues brésiliens reconnaissent l'unicité de *Voluta ebraea* Linné, 1758 et sa variabilité. J'ajouterais que Luiz Simone de l'Université de São Paulo, Alexandre Pimenta du Musée National de Rio de Janeiro, José Coltro, Damaso Monteiro, Mauricio Lima, Geraldo Pomponet, Luiz Couto, tous connaisseurs de la faune malacologique brésilienne m'ont tous assuré de leur désaccord à la découverte de cette publication d'une nouvelle espèce.

Voluta thevenini sp. n. Tiziano Cossignani & Alain Allary
gennaio, 2024
Olotipo 187,5 mm - M.N.H.N. - Parigi
Camocim, Stato del Ceará, NE del Brasile.



Fig. 1: *Voluta thevenini* Cossignani et Allary 2024

DISCUSSION :

Voluta ebraea Linné, 1758 est une espèce strictement brésilienne trouvée de l'état d'Alagoas à l'état du Para donc sur plus ou moins 2000 km de côtes. Elle est donc limitée au Sud par l'embouchure du Rio São Francisco et au Nord par le delta amazonien. C'est une espèce extrêmement variable par la forme, la couleur, le dessin et par la taille (75 mm à 236 mm, soit du simple au triple), elle varie d'une région à l'autre. Les experts savent reconnaître un exemplaire de Natal (Rio Grande do Norte) d'un exemplaire de Camocim (Ceara), mais des intermédiaires existant, il n'a pas été créé de variétés recevables à ce jour. De nombreux collectionneurs ont profité de cette diversité pour faire collection de *Voluta ebraea*.

Le gouvernement brésilien par ses structures IBAMA et ANVISA

ayant des exigences sur le fait que le matériel ne sorte pas du pays il est théoriquement interdit de publier une espèce brésilienne dont l'holotype n'est pas déposé au Brésil.

La variabilité de *Voluta ebraea* nous fait penser qu'il y aurait probablement du dimorphisme sexuel chez cette espèce, les femelles étant plus larges que les mâles, comme on peut l'observer sur les lointains cousins que sont les *Cymbium* africains.

Enfin et surtout : *Voluta ebraea* est connue pour avoir des nodules de taille très variable, elle peut être lisse ou porter de longues cornes (fig. 2), sachant qu'il existe une forme du Ceara d'assez grande taille ici dénommée *Voluta thevenini* qui possède un épaulement lisse.



Fig. 2: *Voluta ebraea* Linné, 1758, variabilité des nodules

Toutefois parmi ces exemplaires on en trouve également avec de faibles nodules ou des nodules plus marqués et ce, dans la même région géographique (fig. 3).



Fig. 3: 2 *Voluta ebraea* Linné, 1758 avec caractéristiques analogues sauf présence de nodules

De plus l'argumentation que *Voluta thevenini* aurait des plis columellaires concolores à la couleur de la paroi columellaire au contraire de sa soeur *Voluta ebraea* n'est pas correcte car la couleur des plis columellaires de *Voluta ebraea* est variable mais parfois elle est concolore avec celle de la paroi columellaire (fig 4).



Fig. 4: *Voluta ebraea* Linné, 1758, avec plis columellaires concolores à la paroi columellaire

L'exemplaire de *Voluta ebraea* montré pour comparaison est de Fortaleza (Ceara) à moins de 300 kilomètres de cette « nouvelle espèce », et sans motif particulier d'isolement. Je ne connais pas d'espèce endémique de Camocim par ailleurs, les conditions environnementales y étant identiques à celle des plages avoisinantes.

CONCLUSION :

Nous pensons donc non recevable cette nouvelle espèce, et nous conseillerions aux auteurs de lui donner plutôt un nom de forme.

Pareille tentative avait été commise précédemment pour redécouper *Harpulina lapponica* (Linné, 1767) en créant *Harpulina diannae* et *Harpulina stimpsonorum*, alors que la variabilité de *lapponica* ne justifiait pas ces créations.

En dehors de ces exemples une dérive est en train de se commettre avec la re-création de nouveaux genres tels *Relegamoria* Iredale, 1936 remise au goût du jour pour y inclure *Amoria molleri* Iredale, 1936 et ses variations érigées au rang d'espèces par Maxwell et Berschauer, alors que ce genre avait depuis longtemps été synonymisé avec *Amoria* Gray, 1855. De fait d'autres espèces d'*Amoria* possèdent des lèvres épaissies tel *Amoria rinkensi* Poppe, 1986. Et surtout, si l'on accepte que *Cymbiolista* Iredale, 1929 soit un sous-genre d'*Amoria* il serait alors plus cohérent de placer *Relegamoria* en sous-genre également.

De même j'ai cherché à démontrer que les créations génériques de Veldsman et Veldsman de 2022 dans la revue *Visaya* concernant le redécoupage du genre *Athleta* en 3 nouveaux genres n'était pas recevable car les espèces fossiles d'*Athleta* sont proches des *Athleta* sud-africaines modernes, n'ayant pas insisté sur l'apparente erreur de passer en genre les sous-genres *Festilyria* et *Simililyria* incluses à juste titre dans le genre *Callipara* par Bail et Poppe dans leur ouvrage monographique sur la Tribu Lyriini.

Il serait donc souhaitable que les auteurs « splitters » évitent de bouleverser un équilibre durement acquis au cours des travaux successifs du regretté Patrice Bail.

REMERCIEMENTS :

Je remercie notre éditeur Fabrice Prugnaud pour ses conseils, ses corrections et sa patience.

Et je remercie Geraldo Pomponet Oliveira qui m'a donné accès

à ses 500 *Voluta ebraea*.

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Planche 1: *Voluta ebraea* Linné, 1758 coquilles avec nodules absents ou très peu marqués sur le dernier tour.



Planche 2: *Voluta ebraea* Linné, 1758, autres spécimens présentant entre 9 et 15 nodules plus ou moins marqués



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